Conserving **Salmon**

King County Accomplishments and Action Plan

August 2002

King County

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Conserving Salmon

King County Accomplishments and Action Plan

Prepared by

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August 2002

This material is available in alternate formats for people with disabilities upon request by calling Maureen Dahlstrom at 206-263-6058.

KING COUNTY

August 2002

King County's commitment to salmon conservation and environmental protection has resulted in a strong record of accomplishments. Further, it has resulted in a better understanding of conservation practices that will benefit everyone – fish and wildlife, the greater ecosystem, and our own quality of life.

Our environmental legal responsibilities began to change three years ago when chinook salmon and bull trout were listed as threatened under the Endangered Species Act (ESA). New federal rules prohibit *take,* which makes it illegal to harm listed species or their habitat. Although federal agencies are reexamining requirements for protecting salmon and currently defining recovery goals, King County has taken the initiative to collaborate with regional partners and make progress now towards conservation on the ground.

Through the Tri-County Salmon Conservation Coalition, we proposed an unprecedented local salmon conservation program – the *Tri-County Model 4(d) Rule Response Proposal*. The Tri-County Coalition also recently contracted a third party Biological Review of this Model that functions as an extensive best available science resource. The Washington Growth Management Act requires local governments to consider the best available science when protecting critical areas and making land use decisions. King County is using the Model and Biological Review as intended.

We are tailoring the Model to our particular landscape, using science as a guide, and modifying programs and regulations to conserve salmon. King County will use its authority under the Growth Management Act and the federal Clean Water Act to make changes and reduce potential legal liability under ESA. The County does not plan to seek formal approval of its development regulations under the federal ESA. We have requested a *take* limit for the Regional Road Maintenance Program that is pending approval. Most important is our policy commitment to do what we can within our legal authority to protect and restore habitat, and prevent further listings under ESA.

We have demonstrated how much we can achieve within our current means through innovation, however, conservation requires continuing commitment. We need to maintain strong regional, federal and state partnerships for adequate funding and comprehensive gains in conservation. This report, *Conserving Salmon: King County Accomplishments and Action Plan*, highlights King County's progress on conservation and charts our actions for the future.

Sincerely,

King County Executive

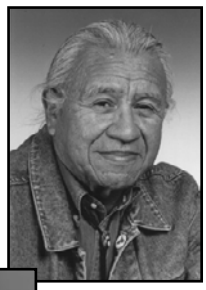
REGIONAL PARTNERSHIP

King County is committed to working with regional partners to conserve fish and wildlife. There is no other way to successfully protect and restore habitat.

FEDERAL, TRIBAL, AND STATE LEADERS

Ron Sims has demonstrated outstanding leadership in pulling the region together through the Tri-County process and building a comprehensive approach to salmon recovery. Not only has King County helped develop a blueprint for long-term success, but it is taking immediate actions that help salmon. Whether through consensus-building, planning, or through securing federal, state and local funding, Ron Sims' efforts aren't just making a difference in King County, they are making a difference in the entire Puget Sound region.

William Ruckelshaus
Chair, Washington State Salmon Recovery Funding Board
Former Administrator, US Environmental Protection Agency



Saving a threatened species in an urban environment is not an easy task. But Ron Sims has demonstrated he isn't committed to salmon recovery because it is a federal mandate. Like the Tribes, he is committed to salmon because it is the right thing to do.

Billy Frank, Jr.
Chair, Northwest Indian Fisheries Commission

Citizens of the entire Puget sound regional are fortunate to be represented by individuals willing to show the political leadership needed to tackle the difficult issue of salmon recovery. The Tri-County salmon recovery effort and related Biological Review represent the most comprehensive ESA salmon conservation effort attempted in a growing urban area anywhere in the U.S. I want to acknowledge the effort of Tri-County leadership and elected officials including the three county executives - Ron Sims, Bob Drewel, and John Ladenburg, and all of the mayors from Seattle, Tacoma, Bellevue and Everett who have led this extraordinary effort.

Robert Lohn
Regional Administrator,
National Marine Fisheries Service

We appreciate the challenges associated with reconciling the ongoing needs for economic growth and development with the requirements of regional salmonid conservation. [Tri-County chairs] have made great strides in demonstrating that these two interests need not be mutually exclusive. We are encouraged by your leadership and the strategy developed by your staff in coordinating [a] conservation initiative for populated, developing and rural landscapes.

Ken S. Berg
Manager, Western Washington Office, U.S. Fish and Wildlife Service

Making fish-friendly improvements to a county's stormwater, wastewater and floodplain management plans aren't necessarily the stuff of front-page news, but they are exactly the kinds of actions needed to gain certainty to protection of habitat critical to the restoration of chinook and other salmon populations in King County, and we have Ron Sims' strong leadership to thank for these improvements. The Washington Department of Fish and Wildlife remains committed to partnering with Executive Sims as we tackle the difficult but essential task of restoring chinook.

Jeff Koenings, PhD
Director,
Washington Department of Fish and Wildlife

Facing an immense challenge with threatened species in an urban setting, King County deserves credit for partnering effectively with other local governments to develop salmon conservation plans that balance using the best science, meeting the state Growth Management Act goals and keeping our economy strong.

Doug Sutherland
Commissioner of Public Lands,
Washington Department of Natural Resources

COUNTY LEADERS

Partnership is the success story behind the Tri-County salmon recovery effort. Working together, county, local and tribal governments, environmental and business organizations, and private citizens have built a model plan for preserving and rebuilding our fisheries resources. Together we can meet the goals of the Endangered Species Act while preserving local control. Partnership works.

Bob Drewel
Snohomish County Executive

King County residents place a high value on protecting our natural resources, among them the preservation and recovery of our salmon. Local and national governments must play a vital and active role in their long-term protection. King County government is ever-mindful of this role and responsibility as we go about our everyday business. We still have a great deal of work to do as we save imperiled salmon stocks, steward recovering ones, and marvel at healthy fish runs. We have come a long way, but we'll continue to work toward conserving our fish and the habitat that supports the great natural resources of the Pacific Northwest.

Larry Phillips
Council member, King County

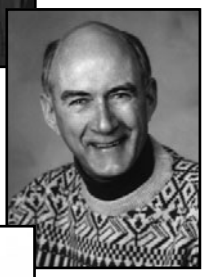
King County recognized early on that salmon recovery would require a region-wide commitment of good science, involved citizens, committed leaders, and dollars. Innovative efforts like "WaterWays 2000" — which in the early '90s set aside money and established a scientific panel to identify King County's "at-risk" streams — have served as a model for other regions and jurisdictions.

Louise Miller
Former Tri-County Executive
Committee member
Former Council member, King County

CITY LEADERS

No one person or government can save salmon. We work better when we work together. That is exactly what Seattle, King County and all of our partners are doing.

Greg Nickels
Mayor, City of Seattle



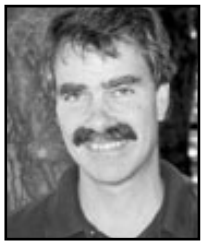
Working to save Salmon also means working to save the best of our natural environment for everyone in the Puget Sound region. County Executive Ron Sims has been central to bringing Tri-County leaders together in a cooperative atmosphere to work on this important task. He has stepped up to the plate taking some political risk in doing what is right. That is political and environmental leadership.

Chuck Mosher
Council member, City of Bellevue

King County has been a good partner; working collaboratively with the local jurisdictions (cities), to preserve and restore valuable environmental sites. This will help us with the salmon, our water, and leave something precious behind for future generations.

Rebecca Clark
Mayor Pro-Tem, City of Covington
Vice-Chair WRIA 9 Green/Duwamish Forum

ENVIRONMENTAL LEADERS



Executive Sims has demonstrated leadership and vision in his work to develop and execute a salmon conservation strategy. A critical element of this strategy has been King County's success with landowners and other partners to protect thousands of forested and riparian acres. One of our most cost effective conservation actions is protecting existing high quality habitat before its gone.

Gene Duvernoy
President, Cascade Land Conservancy

The breadth of Ron Sims' and King County's commitment to wild salmon recovery is inspiring.

Barbara Cairns
Executive Director
Long Live the Kings

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Chapter 1 Introduction

Three years ago, when two salmon species were listed as threatened under the Endangered Species Act (ESA), King County faced new legal responsibilities. Executive Ron Sims made a personal commitment to leadership and action on behalf of salmon. King County is working to conserve ecosystems to sustain healthy salmon populations, other fish and wildlife habitat, and the quality of life in the County. This report highlights King County's 2000-2001 accomplishments and outlines future actions for salmon conservation.

King County's Unique Conservation Opportunity

The County covers more than 2,100 square miles, including four major watersheds – Green/Duwamish and Central Puget Sound watershed, Lake Washington/Cedar/Sammamish watershed, the Snohomish watershed, and Puyallup/White watershed. With such a broad geographic area – rich in natural resources – King County government is in a unique position to be a leader in conservation.

The following statistics indicate opportunities for conservation:

- 1,760 square miles in the County are unincorporated and not designated for urban use; King County's authority over land use extends throughout the unincorporated area. Approximately 85 percent of King County's land area is undeveloped. See Figure 1, which shows King County land use in 2000.
- Approximately 1,300 square miles of the County's area are designated as Forest Production District. About 70 percent of the Forest Production District is in public ownership and managed by other public agencies, including portions of the Alpine Lakes Wilderness Area, Mt. Baker-Snoqualmie National Forest, state and county parks, Washington State Department of Natural Resources and watersheds for the cities of Seattle and Tacoma.
- King County includes approximately 32,000 acres of existing wetlands that play an important role in water quality and instream flows.
- King County owns and manages approximately 10,000 acres of open space and resource lands.

- The Puget Sound basin provides habitat for a total of 209 salmonid and steelhead stocks, including chinook, coho, pink, chum, and sockeye salmon, and steelhead/rainbow, bull, and cutthroat trout. According to Assessment of Chinook Salmon and Bull Trout Spawning Areas in Tri-County Urban Growth Areas: Methods, Assumptions and Findings, a 2002 King County study, there are a total of 406 stream miles in King County that provide habitat for chinook salmon (listed as threatened under the ESA). More than 70 percent of those stream miles are in the County's rural area.[1]
- King County is home to a diversity of wildlife species, including the bald eagle, peregrine falcon, grey wolf, northern spotted owl, common loon, pileated woodpecker, great blue heron, cougar, bear, and many more.

King County provides regional services to all rural and urban residents. These services include regional parks and trails, open space, flood protection, public health services, public transit, road services, solid waste, wastewater treatment, stormwater management, and watershed planning. In this regional role, King County has many opportunities for protecting and restoring habitat.

Habitat conservation and best management practices can generate economic benefits and prevent future costs in the long term. For example, environmentally sensitive business practices and smart development (with less impervious surface area) can reduce utilities' costs and limit the need for additional water quality and stormwater facilities. Better floodplain management decisions avoid potential property damage caused by flooding. Other tangible economic benefits include increased property values near protected green spaces and longer salmon fishing seasons as salmon populations increase. King County has a unique economic opportunity in conservation.

Conservation Challenge

For well over a century, human activities have contributed to the loss of fish and wildlife in the region. Local governments are challenged with addressing complex habitat requirements with limited legal authorities and funding.

Some salmon stocks have been rendered extinct, their unique contributions to genetic diversity and ecosystem health thus lost. As a result of this

[1] Stream data are not available for bull trout.

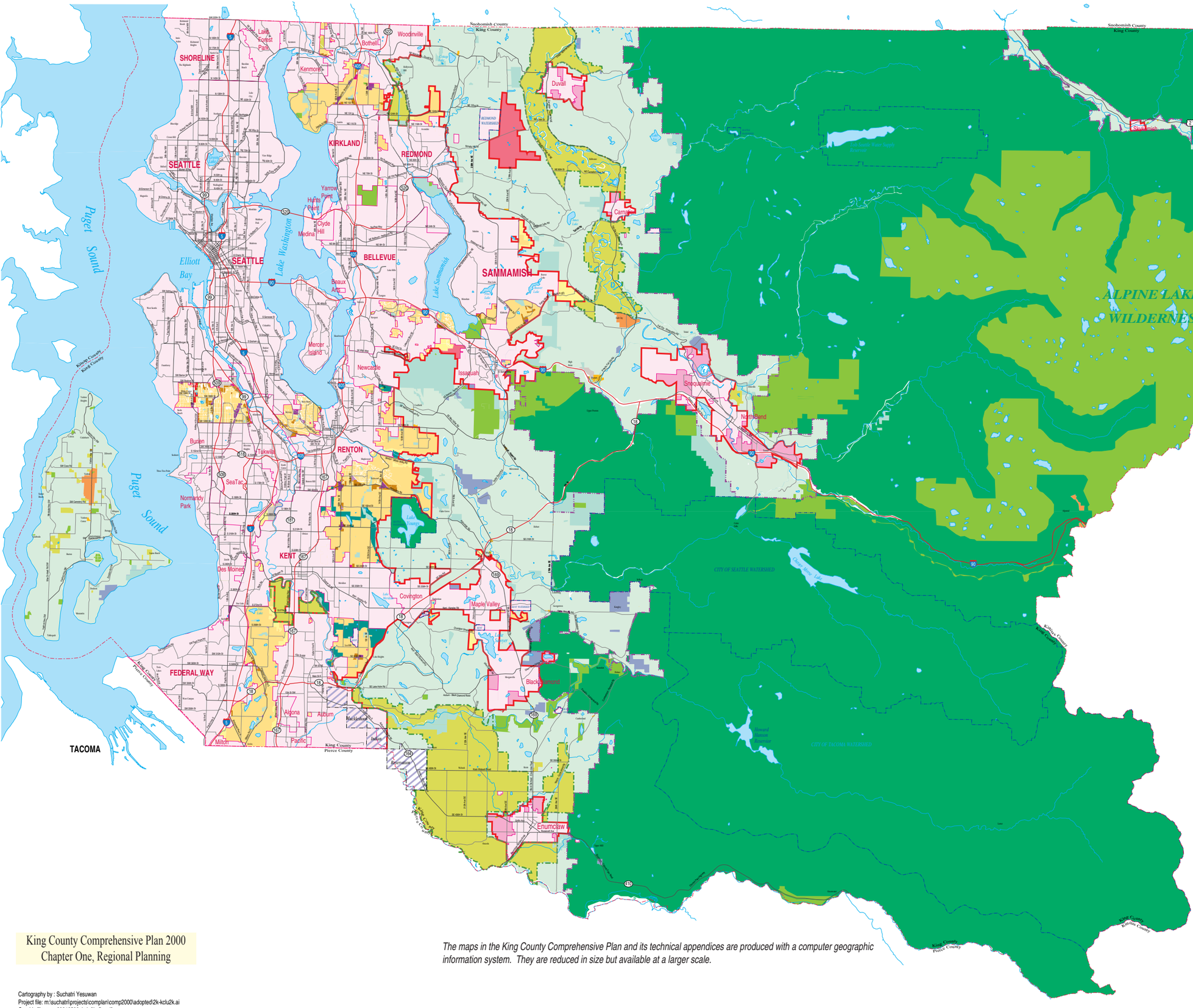

Figure 1.
Land Use 2000

- Unincorporated Activity Center
- Community Business Center
- Neighborhood Business Center
- Commercial Outside of Centers
- Urban Plan Development
- Urban Residential >12du/ac *
- Urban Residential 4-12du/ac *
- Urban Residential 1du/ac *
- Rural City Urban Growth Area
- Rural Town
- Rural Neighborhood
- Rural Residential
- Industrial
- Forestry
- Agriculture
- Mining
- Greenbelt/Urban Separator
- King County Owned Open Space/Recreation
- Other Parks/Wilderness
- Incorporated City
- Muckleshoot Reservation
- Urban Growth Area Boundary
- Forest Production District Boundary
- Agricultural Production District Boundary

** du = dwelling unit, ac = acre*

Source: King County Department of Development and Environmental Services

This map is intended for planning purposes only and is not guaranteed to show accurate measurements.

King County

6 5 4 3 2 1 6 0

Miles

N W E S

February 2001

The maps in the King County Comprehensive Plan and its technical appendices are produced with a computer geographic information system. They are reduced in size but available at a larger scale.

Cartography by : Suchatri Yesuwan
Project file: m:\suchatri\projects\complan\comp2000\adopted\2k-kclu2k.ai
Graphic file: s_y_20010509_kclu2k_fin.pdf

continuing decline, federal agencies have granted protection under the ESA to several imperiled salmonid species along the West Coast.

Across this landscape, fish and wildlife species in King County need watersheds and riparian areas that provide clean water, cover, food, and refuge. Salmon in particular need spawning gravel with minimal silts and fine sand; diverse stream channel characteristics; areas in which to feed and acclimate in estuaries and nearshore marine environments; and access to off-channel and upstream habitat.

The following factors are contributing to the decline of not only chinook salmon and bull trout (that are listed as threatened under ESA), but other fish and wildlife in this region:

- Habitat loss (due to fragmentation, natural resource use, draining and filling of freshwater and estuarine wetlands, dewatering, development and increase in impervious surface, water quality degradation, and sedimentation)
- Hydroelectric and flood control projects (which cause habitat blockage, shifts in flow regime, and sedimentation)
- Harvest
- Fish hatcheries and intrusion of non-native species.

Hydroelectric, harvest, and hatchery management are factors of decline that are largely beyond the authority of King County and are instead managed by the state of Washington, federal government, and the Tribes. However, King County can address habitat factors of decline. As a local government, King County can regulate its own proprietary activities such as road construction and maintenance, stormwater and wastewater facility construction and maintenance, park and open space management, and land use and development, over which the County has substantial authority. Local funding to prevent habitat degradation while providing services, protect and restore habitat, and regulate development is limited.

Putting Conservation In Action

King County will continue to act upon its salmon conservation strategy, set forth in March 1999 in *Return of the Kings: Strategies for the Long-Term Conservation and Recovery of the Chinook Salmon*. Return of the Kings defined the Executive's initial response to then-pending ESA species listings. The County's conservation management goals include the following:

- **Do no harm.** Reduce and prevent harm by modifying, mitigating, or abandoning existing programs, projects, and activities.
- **Conservation.** Protect key watersheds, landscapes, and habitats by acquisition, regulation, or voluntary action.
- **Remediation.** Restore, rehabilitate, and enhance damaged habitats to complement conservation actions.
- **Research.** Fill critical gaps in scientific and institutional information.

These goals – aimed specifically at salmon conservation – also benefit other aquatic and terrestrial species. For example, resident orca whale populations in south Puget Sound depend on salmon as a food source; these whales are also in decline and protected under the federal Marine Mammal Protection Act. King County will balance these goals, legal authorities, regional planning priorities, and new scientific information to put conservation in action by:

Integrating Comprehensive Land Use and Resource Planning. King County is integrating comprehensive land use and resource planning under the Growth Management Act, Clean Water Act compliance activities, and fish and wildlife habitat conservation under ESA, as well as other mandates.

Executive Sims introduced his SmartGrowth Initiative in 1998 to address fast-paced population growth and its associated challenges. This initiative balances transportation, affordable housing, and livable communities goals with the protection of King County's environmental resources under the Growth Management Act.

Using the Tri-County Model. Executive Sims has directed that King County employ the Tri-County Model 4(d) Rule Response Proposal: A Salmon Conservation Program and information in Biological Review: Tri-County Model 4(d) Rule Response Proposal in developing the following (see Figure 2, a map of the Tri-County area):

- Adapting key elements of the Land Management Program into new critical areas and land use regulations (to be submitted to the King County Council for legislative action in late 2002).
- Updating the King County Surface Water Design Manual to provide protection equivalent to the Washington State Department of Ecology's 2001 Stormwater Management Manual for Western Washington.

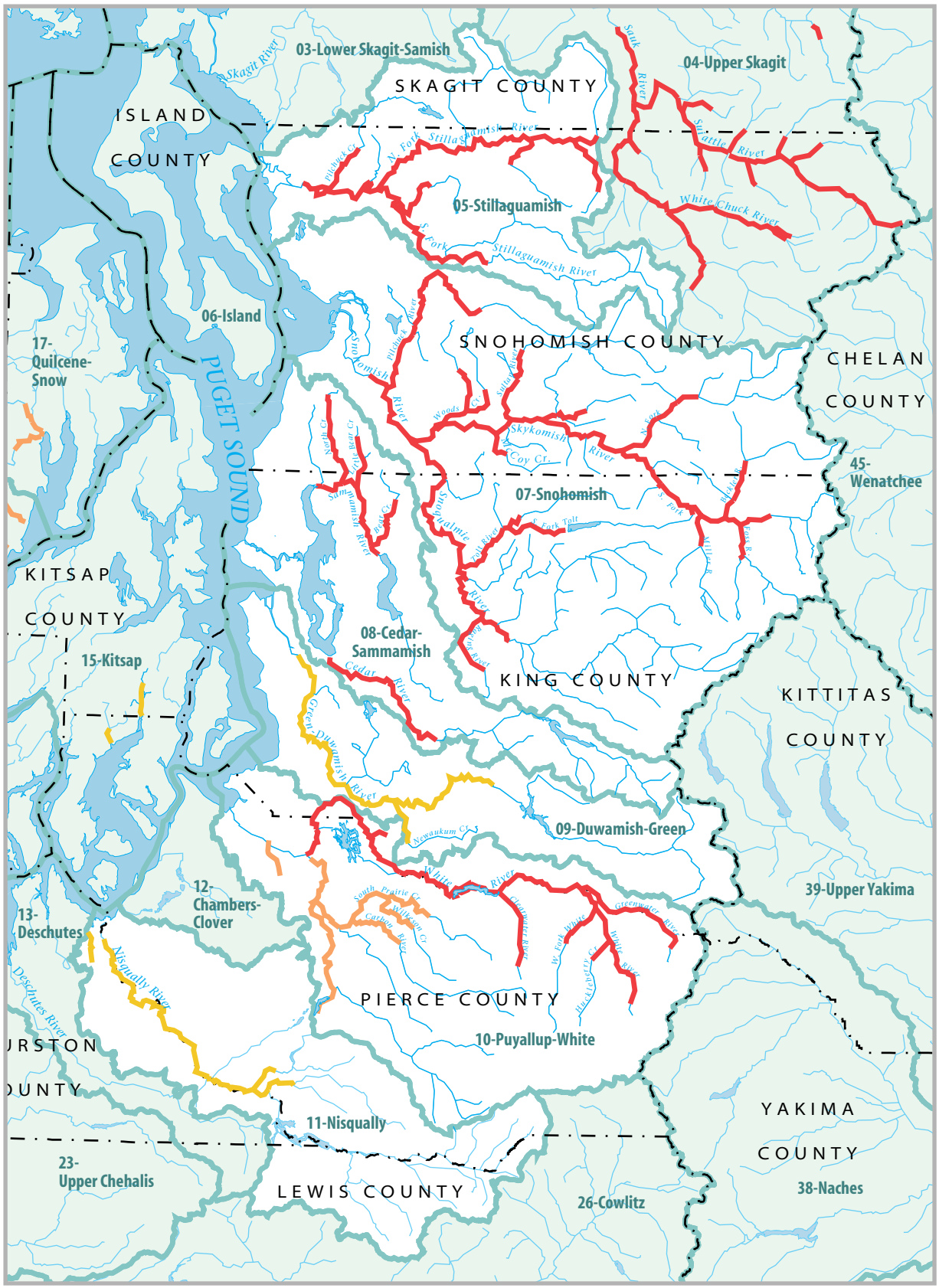

Figure 2.

Chinook Stock Status and Distribution

Tri-county WRIA Basins

- River
- Lake
- County Boundary
- 07- WRIA Basin Boundary, Number & Name
- River/Stream with Healthy Chinook Stock
- River/Stream with Depressed Chinook, Unknown or Non-native Stock
- River/Stream With Critically Depressed Native Chinook Stock

N

0 2 4 6 8 10 Miles

Produced by: Visual Communication & GIS Unit, Public Outreach Unit

File Name: 9806TriCounty-Chinook status map.ai LP, FB

King County
Department of Natural Resources

- Maintaining the current high quality of stormwater management programs for complaint investigation, inspection, enforcement, maintenance, source control, and public education and outreach.
- Fine tuning standards, mitigation practices, and programs through stormwater plans, and making strategic capital improvements.
- Increasing the use of low impact development techniques to avoid or reduce stormwater impacts that cannot be mitigated by conventional means.
- Implementing the Regional Road Maintenance ESA Program Guidelines.
- Contributing funding and leadership to watershed planning efforts and to Shared Strategy conservation and recovery planning.
- Contributing to the development of new scientific information and monitoring programs to guide Comprehensive Plan amendments, regulations and department services and programs.
- Monitoring the effectiveness of regulations, programs, and improvement actions over time and making adjustments as needed.

Conserving the Ecosystem. In addition to the Tri-County Model salmon conservation programs, King County is leading other conservation efforts to protect salmon and other wildlife habitat including water supply planning, agricultural and forestland preservation, integrated pest management, and groundwater protection. King County will pursue a comprehensive conservation strategy to protect, recover, and sustain the natural functions of aquatic and terrestrial ecosystems.

Funding Conservation. King County will continue to fund salmon conservation projects, programs, and regulatory needs; support strong inter-jurisdictional collaborations; work to build and maintain critical state and federal funding levels; and set the goal of dedicating one percent of its capital budget funds to habitat restoration and protection.

Review of ESA Milestones and Events

The events leading up to and following the ESA listings of salmonids are complex, and have led to many regional conservation actions. The following section provides a brief review of major events and actions since 1998.

ESA Salmonid Listings and Federal Recovery Planning

Chinook salmon and bull trout were listed as threatened under the ESA in May 1999 and December 1999, respectively. Listing documents are available at the following web sites: *www.nwr.noaa.gov* and *www.pacific.fws.gov/fisheries*. Coho salmon, Lake Sammamish kokanee, steelhead, and sea-run cutthroat trout have come under scrutiny for potential listing under the ESA. The following timeline (Figure 3) identifies key milestones related to the listing of chinook salmon and bull trout as threatened. These milestones are discussed in the sections that follow.

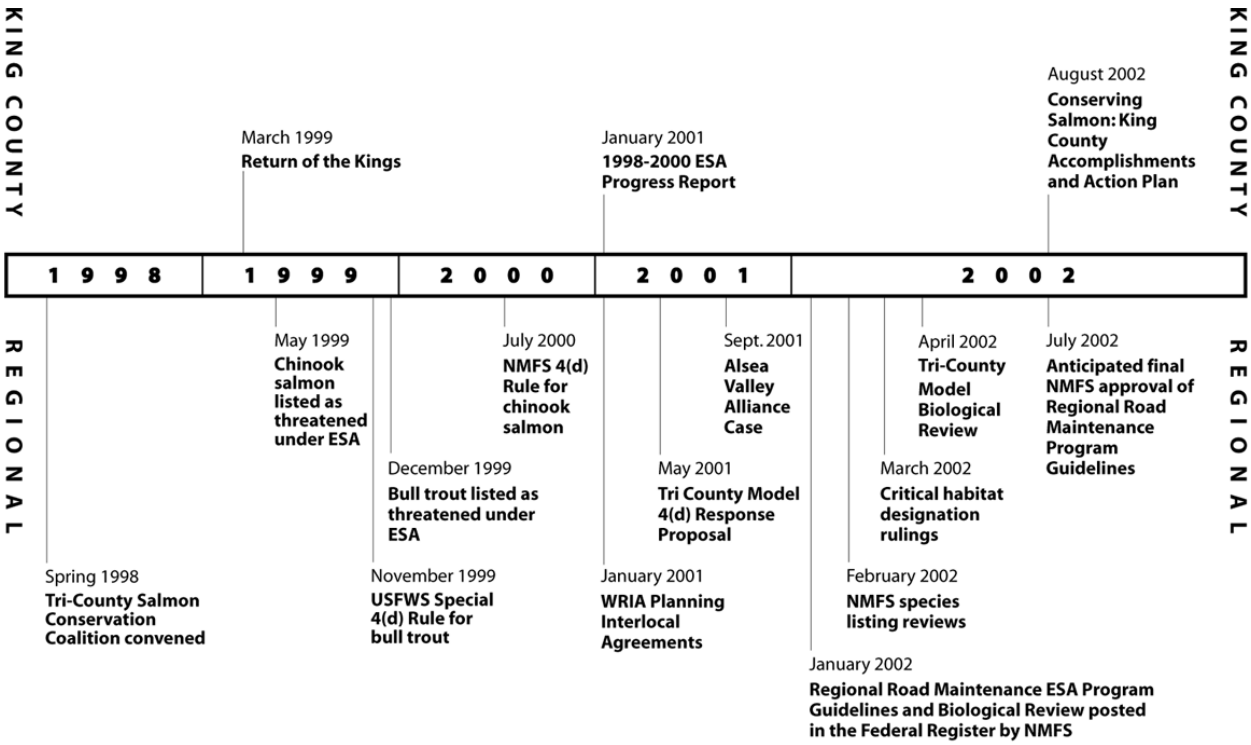

Figure 3. ESA Timeline
Key milestones related to the listing of chinook salmon and bulltrout as threatened

King County
Department of
Natural Resources and Parks

4(d) Rule

Section 4(d) of the ESA grants the secretaries of the U.S. Department of the Interior and the U.S. Department of Commerce broad administrative discretion to promulgate regulations that are necessary to provide for the conservation of threatened species. Section 4(d) also confers upon the National Marine Fisheries Service (NMFS) and the U.S. Fish and Wildlife Service (USFWS) discretion to apply to a threatened species any or all of the prohibitions against *take* that automatically apply to endangered species via ESA Section 9. Section 3 of the ESA defines *take* as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, collect, or to attempt to engage in any such conduct." Under this rule, local governments and others are prohibited from *taking* listed species or their habitat.

USFWS has used its authority under ESA Section 4(d) to implement a standing prohibition on the *take* of threatened species (codified at 50 CFR 17.31(a)) under Section 4(d) of the ESA. In other words, *take* prohibitions automatically apply when the USFWS lists a species as threatened, such as the bull trout. NMFS does not have a standing prohibition on *take*. Instead, NMFS uses its authority under Section 4(d) to adopt protective regulations on a species-by species basis. NMFS protective rules usually incorporate the ESA Section 9 prohibition on *take*. NMFS issued a 4(d) Rule for chinook salmon in July 2000. The rule prohibits most *take* of that species.

However, the NMFS 4(d) Rule also limits the effect of the *take* prohibition on certain activities, such as routine road maintenance; habitat restoration; water diversion screening; scientific research; and municipal, residential, commercial, and industrial development. If local governments apply for a formal municipal, residential, commercial, and industrial development *take* limit, the NMFS 4(d) Rule for chinook requires that local governments apply individually. Jurisdictions cannot apply for a municipal, residential, commercial, and industrial limit collectively, as was expected by the Tri-County Salmon Conservation Coalition before NMFS issued its 4(d) Rule. In summary, the mandatory effect of the NMFS 4(d) rule is that King County and others must avoid committing a *take*. The decision whether to seek *take* limits and the legal benefit thereof is voluntary, and it is a policy decision.

Court Cases and ESA Listing Questions 2001-2002

Alsea Valley Alliance Case

On September 10, 2001 the federal district court in Oregon ruled that NMFS improperly listed the naturally spawned populations of the Oregon coastal coho. The court determined that NMFS erred by listing only the naturally spawned populations of the Oregon coastal coho, and not including the hatchery populations of the same species. While the outcome of this case is unknown, it has the potential to affect the listing of Puget Sound chinook salmon as threatened.

However, in November 2001, an appeals court ordered a *stay* of the order in the *Alsea* case. The stay suspended the district court ruling and temporarily reinstated the Oregon coastal coho listing while the appeals court decides whether the ruling was correct. The appeals court may issue a decision by late 2002.

The court's decisions will not affect the current NMFS plan to review its hatchery policy and revisit prior listing decisions once the hatchery rule is established.

Links to documents describing the case and the NMFS response are provided below:

- Link to NMFS web site and documents describing planned actions and positions in response to the ruling on the Alsea Valley Alliance case: *www.nwr.noaa.gov/occd/occd.html*
- Link to *NW Fishletter* (produced by Energy NewsData); this newsletter contains information and speculation about a number of salmon-related lawsuits: *www.newsdata.com/enernet/fishletter*

NMFS Hatchery Policy and Species Listing Reviews

In the February 11, 2002 edition of the Federal Register, NMFS published its finding that recent petitions to delist 14 west coast salmon and steelhead species may be warranted. Additional information on NMFS findings is available at:
www.nwr.noaa.gov/occd/PetitionFindingsFRN.html

Revision of the NMFS Critical Habitat Designation

On April 30, 2002, the District of Columbia federal district court approved a proposed consent decree to end a lawsuit instigated by the National Association of Homebuilders. Under that consent decree, NMFS agreed to voluntarily withdraw and reconsider its designation of critical habitat

for Puget Sound chinook salmon and other species. A summary of the case is available at: *www.newsdata.com/enernet/fishletter/fishltr143.html#2*. A press release on the ruling is available at *www.nwr.noaa.gov/1press/031102.pdf*.

Tri-County Model 4(d) Rule Response Proposal

The Tri-County Model was published in 2001 to provide options for local governments to reduce the risk of harming listed species and to contribute to the long-term conservation of salmonids. The Model was also intended to serve as a template that jurisdictions could use to apply for a *take* limit under the 4(d) Rule issued by NMFS or any USFWS special rule for bull trout. The Model includes the following programs:

- Land Management
- Stormwater Management
- Regional Road Maintenance ESA Program Guidelines[2]
- Watershed-Based Salmon Conservation Planning
- Monitoring and Adaptive Management
- Habitat Acquisition and Restoration Funding.

The Model is available at *www.salmoninfo.org*.

Tri-County Biological Review

The Biological Review was published in April 2002. It is a third party evaluation of the Model, prepared by Parametrix, Inc., with input from NMFS, USFWS, and Tri-County local government staff. It evaluates whether and, if so, how the Tri-County Model contributes to salmon conservation and analyzes how the model meets the specific requirements of the NMFS 4(d) Rule. The Biological Review is included to serve as a resource for best available science. The Biological Review is available at *www.salmoninfo.org.*

[2] The Regional Road Maintenance ESA Program has been submitted to NMFS separate from the rest of the Tri-County proposal under Limit 10 of the 4(d) Rule. NMFS published notice of availability and request for comments on the submittal in the Federal Register at Volume 65, No. 17, p.3688 (January 25, 2002) (Regional Road Maintenance ESA Forum 2002a). As a result, the Regional Road Maintenance ESA Program Guidelines may be implemented as a stand-alone program separate from the stormwater and land use programs. This program has a Monitoring and Adaptive Management component, but does not require participation in the WRIA Based Planning or Habitat Funding Programs.

Shared Strategy

Shared Strategy is a collaborative process to develop recovery goals and a recovery plan for chinook salmon in the Puget Sound Evolutionarily Significant Unit. Watershed Resource Inventory Area (WRIA) planning groups will consider how to meet recovery goals within each of the WRIAs in Puget Sound. A WRIA is a geographic area designated by the Washington State Department of Ecology. King County is participating in the Shared Strategy process. Through its leadership in WRIA planning, King County is contributing to technical studies, and working to implement early conservation actions identified in watershed near term action agendas. See Chapter 6 – Regional Coordination.

Keeping Track of King County's Progress

Since 1998, King County has maintained salmon conservation information on *www.metrokc.gov*, contributed to *www.salmoninfo.org* (a regional web site on salmon), and published the two reports discussed below. Return of the Kings and the *1998-2000 King County ESA Progress Report* were developed to inform the King County citizens and the region of the County's approach and actions for salmon conservation. This report revisits Return of the Kings and the *1998-2000 ESA Progress Report* – highlighting King County's progress and accomplishments since 2000 – and sets the stage for future conservation actions.

Return of the Kings

The report Return of the Kings was published in March 1999 to define salmon conservation issues, the potential impact of ESA listings, regional approaches to conservation, and King County's long-term conservation strategy. The report provided detailed information on King County's:

- Scientific and management approach, including the overall ecological principles that guide the approach
- Legal authorities for salmon conservation
- Past, continuing, and additional early conservation actions
- Results of a biological assessment of programs and regulations
- Proposed salmon conservation planning process
- Funding and implementation actions.
- Return of the Kings is available at *www.metrokc.gov*.

1998-2000 King County ESA Progress Report

The *1998-2000 King County ESA Progress Report* was published in January 2001 to provide a brief update on the County's habitat activities, scientific studies and monitoring efforts, conservation practices (including programs, policies and regulations), public outreach, and watershed planning. The report identified next steps for implementation of conservation programs.

The full 1998-2000 King County ESA Progress Report is available at *www.metrokc.gov*.

Building on Regional Successes

King County was a leader in the Tri-County process and a major contributor to that planning and technical analysis effort. The Tri-County Salmon Conservation Coalition generated significant funding for habitat protection and restoration. The *Tri-County Model 4(d) Rule Response Proposal: A Salmon Conservation Program* and the *Biological Review: Tri-County Model 4(d) Rule Response Proposal* represent unprecedented regional collaboration to contribute to the conservation of ESA-listed species.

Snohomish County Executive Bob Drewel, King County Executive Ron Sims, and former Pierce County Executive Doug Sutherland were instrumental in initiating the Tri-County Salmon Conservation Coalition.

As discussed above, King County will incorporate key elements of Tri-County Model programs and scientific analysis from the Tri-County Biological Review into its programs, regulations, and operations. This report responds to information gained since the listing of salmonids, including the Tri-County Model and the Biological Review.

Report Overview

King County's accomplishments and conservation direction are identified in the following six chapters.

- Chapter 2 – Protecting and Restoring Habitat
- Chapter 3 – Public Outreach and Education
- Chapter 4 – Instream Flows for fish
- Chapter 5 – Gauging Environmental Trends and Improvement
- Chapter 6 – Regional Coordination
- Chapter 7 – Funding Habitat Programs.

Contacts and resources consulted in the creation of this report are included in Appendix A.

Chapter 2 Protecting and Restoring Habitat

To protect and restore fish habitat, King County has changed the way it manages County-owned land and facilities and the way it regulates land use. In particular, the County has improved its management of: stormwater runoff; wastewater; floodplains; road construction and maintenance; and forests, agricultural lands, open space, and landscaped areas. King County also works with other agencies, private landowners and community volunteers to protect and restore habitat. The County also reviews projects with federal links (projects with federal permits or federal funding) according to the requirements of Section 7 of the ESA.

King County's 2000-2001 accomplishments are described below. Individual habitat programs are described in the County's report, Return of the Kings (March 1999), in the *King County ESA Progress Report 1998-2000*, and highlighted periodically at *www.metrokc.gov.*

Stormwater Runoff

The development that accompanies population growth has a dramatic effect on stormwater quantity, quality, and distribution. As hard or paved surfaces replace natural land cover, the area that would naturally absorb rain and storm water is diminished. As this water runs off hard surfaces it gathers speed and collects pollutants, eventually ending up in the streams and rivers that provide fish habitat. King County's efforts to prevent stormwater impacts to fish habitat are discussed below.

Stormwater Regulations

Stormwater experts of the Department of Ecology and Tri-County jurisdictions collaborated to develop the Tri-County Model Stormwater Program. Ecology incorporated the regulatory elements in this program in the *2001 Stormwater Management Manual for Western Washington*. The Washington State Department of Ecology (Ecology) issued a municipal stormwater permit to King County in 1995 under the National Pollutant Discharge Elimination System Permit Program of the Clean Water Act. The permit has been administratively extended until a new one can be issued. The municipal stormwater permit requires King County to implement a comprehensive stormwater management program, including updated stormwater controls that are equivalent with Ecology's Manual. The state manual has been submitted to NMFS and USFWS for review.

In fall 2002, King County plans to publish a public review draft of proposed changes to King County's *1998 Surface Water Design Manual*.

Drainage Review and Inspection of Developments

King County stormwater retention and detention pond.

King County continues to provide expert and in-depth review of drainage plans submitted for permitting of new developments and redevelopments. Great care is taken to ensure that development plans comply with County stormwater standards and land use regulations. County building and land use inspectors (close to 50 individuals) check compliance with drainage and erosion control plans when inspecting other construction activities. Such review is key to identify defects or omissions that otherwise may be overlooked. These reviews and inspections help to prevent development from affecting listed species' habitat.

Maintenance of Stormwater Facilities

King County continues to inspect both public and private stormwater flow control and water quality treatment facilities to ensure that they are operated and maintained according to adopted standards. King County currently monitors the operation and maintenance of more than 2,000 such facilities countywide. These facilities include detention ponds/vaults; treatment ponds, sand filters, and bioswales; and tightlines that safely convey runoff down steep slopes. Private developers built most of these facilities in response to King County code and Surface Water Design Manual requirements for mitigating increases in runoff and pollution from newly developed land. Others were constructed by King County as capital improvements to address specific surface water problems on a sub-regional scale. Proper and continuous maintenance of these facilities is critical to sustaining the protection they provide for fish and fish habitat.

Investigations of Reported Problems

King County continues to provide responsive investigation of drainage and water quality problems reported by citizens. During such investigations, the County typically collects important site information, identifies possible solutions to problems, and determines appropriate courses of action or referrals to other agencies. In many cases, these

investigations are the first step to identify a code violation or urgent threat of significant harm to fish and fish habitat. In urgent situations, the goal is to respond within the 24 hours of a report or complaint.

Source Control Inspections and Enforcement

King County also continues to inspect commercial, industrial, and multi-family development sites to identify source control needs and enforce compliance with the King County Water Pollution Code. The County visits more than 160 sites each year and works with businesses and property owners to implement source control best management practices to prevent pollutants from coming into contact with rainwater runoff. Such best management practices include techniques for storing materials, preventing spills, and cleaning equipment. King County also levies fines and requires corrective action for violations involving illegal dumping and other illicit discharges to surface waters.

Hazardous Waste Inspections and Consultations

In 2001, the Hazardous Waste Management Program conducted more than 3,500 onsite technical assistance visits to local businesses. This program helped businesses to stop discharging more than 6,800 gallons of hazardous wastewater to streams and rivers.

Drainage and Habitat Improvement Projects

Through the Drainage and Habitat Improvement Program, King County designs and implements multi-objective projects that address water quality problems, fish and wildlife habitat enhancement and restoration, localized flooding impacts, damage from erosion and sedimentation, public health issues, and alterations to hydrology. In the past, King County identified these capital projects through basin plans and citizen complaints. In the future, the County will identify such projects will through basin reconnaissance efforts in rural areas, stormwater compliance plans and studies in urban areas, watershed conservation plans, basin steward evaluations, and investigations of problems reported by citizens.

The Drainage and Habitat Improvement Program addresses localized drainage and erosion problems that affect fish and wildlife habitat and natural stream systems. The Small Habitat Restoration Program builds small-scale habitat restoration projects in stream corridors and wetlands that restore fish habitat-forming processes.

Stormwater Compliance Plans and Studies

Both King County and Ecology recognize that while application of the 2001 Ecology *Stormwater Management Manual for Western Washington* (or equivalent) can reduce the impacts of development on the hydrology and water quality of streams, lakes, and wetlands, these technical standards cannot replicate the natural conditions that existed prior to development. For example, flow control facilities can limit the highest peak flows and the amount of time they occur, but these facilities cannot prevent the substantial increases in runoff volume and loss of groundwater recharge that occur when forests are replaced with impervious surfaces and lawns. Similarly, treatment facilities can remove some but not all of the pollutants picked up by stormwater runoff from developed surfaces.

As land is converted to residential, commercial, and other uses, these limitations will result in the incremental degradation of essential habitat unless other actions (e.g., capital improvements) are taken to mitigate or offset land use change. Such actions are necessary both to conserve listed species and to comply with Clean Water Act mandates to maintain and restore the physical, chemical, and biological integrity of the nation's waters to the maximum extent practicable.

In areas that are substantially developed, essential habitat has already been degraded by past development using less restrictive best management practices or none at all. In order to restore habitat to contribute to recovery of listed species and to comply with Clean Water Act mandates, King County must develop area-specific stormwater management strategies to reduce flows and improve water quality to the maximum extent practicable. One way the County can do this is to assess existing flow and water quality problems attributed to stormwater and implement best management practices, including tailored regulations, capital improvements or retrofits, targeted public education, or other programmatic efforts.

To address these compliance issues most cost-effectively, King County will complete stormwater compliance plans and studies for the urban and developing portions of the County. Where these areas extend into other jurisdictions, King County will attempt to form partnerships with those jurisdictions to complete these plans and studies.

Stormwater compliance plans and studies will facilitate implementation of watershed-based salmon conservation plans (see Chapter 6). The plans and studies will also identify non-point stormwater management best management practices for compliance with the total maximum daily loads for currently impaired water bodies, which are expected to be set by the state in water cleanup plans.

King County has begun the initial scoping of stormwater compliance plans and studies, and will initiate the first of these efforts as part of the multijurisdictional Miller and Salmon Creek Basin Plan now being developed.

Wastewater Management


King County West Point Treatment Plant.

King County's Regional Wastewater Services Plan was approved by ordinance in 1999, and is a plan for providing wastewater treatment to the region. Policies described in the plan are the guiding principles for current King County wastewater programs and activities. These policies are intended to guide the County in meeting future wastewater service needs as dictated by the County's Comprehensive Plan (*King County Comprehensive Plan 2000: Shaping Tomorrow*) and to ensure that the region has an integrated, consistent, efficient wastewater management strategy for the future. Based on these policies, King County improves and protects water quality and mitigates environmental impacts of wastewater projects.

King County is currently preparing a habitat conservation plan to minimize wastewater impacts on selected aquatic species, while allowing King County to continue providing reliable, high quality services. This habitat conservation plan is necessary to obtain an Incidental Take Permit from USFWS and NMFS. Such a permit is designed to reduce uncertainties and ensure long-term compliance with ESA. King County is currently negotiating with USFWS and NMFS to develop the Wastewater Treatment Habitat Conservation Plan. It is anticipated that King County will release a draft habitat conservation plan to the public by the summer of 2003.

More information is available at *http://dnr.metrokc.gov/wtd/hcp/indes.htm*.

King County has done a great deal to incorporate the principles of the Tri-County Model (management zone, stormwater management, and road maintenance best management practices) and Return of the Kings early actions into wastewater operations. Specific actions are listed below:

- King County is currently analyzing wastewater impacts on riparian corridors through the Wastewater Treatment Habitat Conservation Plan.
- The County is examining the current state of salmonid habitat in the wastewater service area. This analysis will establish a baseline against which to measure the impacts of future activities.
- King County developed a white paper titled Literature Review of Endocrine Disrupters in Secondary Treated Effluent: Toxicological Effects in Aquatic Organisms. This study was completed in support of the Wastewater Treatment Division Habitat Conservation Plan.
- In collaboration with USFWS and NMFS, the County initiated the Water Quality Effects effort in 2000. This 18-month study carefully analyzed thresholds for the water quality effects of King County wastewater effluent on aquatic species.
- King County is undertaking a five-year, $31 million comprehensive study that aims to identify major infiltration and inflow sources that may affect fish habitat, establish cost-effective solutions to remove infiltration and inflow, and recommend actions to control infiltration and inflow in the future. Infiltration and inflow is water that enters local sewer systems during storms from sources such as leaky sewer pipes, roof drain connections, storm drains, and manhole covers. Most inflow comes from stormwater, and most infiltration comes from groundwater. Flow monitoring to quantify infiltration and inflow was undertaken during the winters of 2000-2001 and 2001-2002. Ten pilot projects for infiltration and inflow control have been selected for implementation beginning in the spring of 2003.

Floodplain Management

King County is a regional leader in its environmentally sensitive approach to floodplain management and flood hazard reduction. The policies for its floodplain management programs are embodied in the 1993 Flood Hazard Reduction Plan. This plan is being updated to explicitly recognize the need to integrate flood hazard reduction program with salmon recovery. King County's floodplain management programs that have direct and important benefits to habitat protection and salmon recovery are discussed below.

Flood Hazard Reduction Plan Update

The County is updating the countywide 1993 *Flood Hazard Reduction Plan* to ensure the plan complies with the requirements of ESA. The Plan update will include an assessment of the 1993 *Flood Hazard Reduction Plan* to determine the extent to which major recommendation and programs have been implemented. The update will also include revisions to the guidelines for bank stabilization projects; standard best management practices for river maintenance and flood protection construction projects; a revised programmatic State Environmental Protection Act checklist and determination for ongoing river maintenance practices; a 6-Year Capital Improvement Program; and recommendations on short- and long-term financing initiatives to fund the Plan.

King County coordinates floodplain management and river corridor studies with watershed planning and fish habitat studies. Coordinating these studies improves the understanding of the interaction between flood hazard reduction and salmon recovery goals. Such coordination also identifies opportunities to integrate projects and programs that have mutually beneficial outcomes.

Habitat-Sensitive Design

King County has placed more than 1,066 pieces of wood in riverine areas as part of flood damage repair projects over the past seven years. The County has produced guidelines for developing appropriate structural and ecological solutions to riverine bank stabilization and flood hazard problems. King County will continue to use the design approaches for river facility repair in these guidelines and will seek funds to acquire lands for future river facility setbacks or removals. Contemporary designs in locations where removals are not feasible will substantially improve habitat conditions.

Flood damage in the Green River basin and completed King County bank stabilization project.

Floodplain Acquisitions

Removing bank stabilization and flood protection projects completely would, over the long term, benefit salmonids. Acquiring land and removing these facilities helps protect or restore naturally functioning river channels. Although this is not possible in many locations, King County pursues land acquisitions and flood protection facility removals where possible.

Demolition of acquired residence in the Cedar River floodplain and site restoration.

Since 1993, King County has acquired nearly 400 acres of floodplain property along its major river systems. Many of these acquisitions included residences that suffered repeated flood losses. King County has relocated or demolished the residences and the floodplain lands are being managed for natural and other beneficial values. In some cases, floodplain sites have been or are locations of major habitat enhancement projects that include the removal of flood protection structures (such as levees and revetments).

Home Elevations

In the past three years, King County has assisted 12 landowners in the Snoqualmie River basin to raise their homes above the 100-year flood

King County home elevation in progress and completed in the Upper Snoqualmie River floodplain.

elevation. The home elevation projects have been funded with federal and state flood disaster funds paying 75 percent and the homeowner paying 25 percent of the cost. The home elevation projects reclaim flood storage and reduce adverse water quality impacts by removing household materials and chemicals that might otherwise be washed into aquatic habitat during major flood events.

Major River Facility Maintenance

King County maintains more than 500 flood protection facilities throughout its major river systems (White, Snoqualmie, Sammamish, Cedar, Green, and South Fork Skykomish) and provides needed repairs to flood-damaged facilities. The County prioritizes facility repairs in accordance with Flood Hazard Reduction Plan policies and evaluates them for consistency with ESA. See the discussion of ESA Section 7 project review in this chapter.

King County levee repair on the Green River.

The County designs project repairs to enhance fish and riparian habitat through measures such as setting back facility footprints, adding significant pieces of large woody debris, and planting upper banks with native trees and shrubs. Such projects stabilize eroding and slumping riverbanks to minimize sedimentation and provide fish habitat benefits. These projects also provide refuge for migrating fish, increase hydraulic complexity and roughness along the riverbank, and allow for the recruitment of additional woody debris. Upper-bank vegetation provides habitat for terrestrial and aquatic insects that provide food for fish.

Biological Effects Analysis of Floodplain Management

King County completed a draft study of the science-based, biological effects of floodplain management on ESA-listed and candidate species in early 2002. The County conducted the effects analysis in accordance with applicable NMFS and USFWS standards. The objective of the analysis was to establish the impacts of river management activities on life stages of each species in each major watershed and to assess the cumulative impacts of the rivers program on listed and candidate species. When the final study is completed in 2002, the County will use it to guide the Flood

Hazard Reduction Plan update and ensure that it complies with ESA mandates.

Floodplain and Channel Migration Hazard Mapping

King County is updating floodplain maps for the major river systems in King County. In the past seven years, the County has completed detailed floodplain mapping studies on more than 70 lineal miles of its rivers. The most recent of these studies covered the upper Snoqualmie River (Middle Fork and South Fork) and the Cedar River from Landsburg to the Renton city limits. King County developed these studies in accordance with federal standards required by the Federal Emergency Management Agency and uses them to review development applications proposed in the mapped floodplain corridors. Updated mapping has reduced the incidence of new development encroachment into hazardous flood-prone areas and has helped reserve these lands for their beneficial natural values, including important fish and wildlife habitat. This work contributes to King County's growth management planning (see Chapter 5).

The County is also mapping the channel migration hazard areas for all major river systems in King County. The County will complete mapping in 2002 for the Cedar River between Landsburg and the Renton city limits, for the South Fork Skykomish River between the confluence of the Tye and Foss rivers and the King-Snohomish county line, and for portions of the lower Snoqualmie River between Fall City and the King-Snohomish county line. The County will complete initial baseline work to characterize the historic channel conditions of the White River in 2002 and will complete channel migration area maps in 2003. Also in 2003, the County will complete the remaining portion of the lower Snoqualmie system together with several major stream systems that exhibit the potential to shift channels (e.g., Issaquah Creek, Bear/Evans Creek, Soos Creek).

King County will manage channel migration hazard areas under regulations currently being formulated as part of the King County Critical Areas Ordinance and under existing standards in the County's adopted channel migration hazard public rule. In addition to the substantial public health and safety needs in regulating these areas, the channel migration hazard maps and regulations provide a direct benefit in protecting important riparian and aquatic habitat needed for listed fish and wildlife species.

U.S. Army Corps of Engineers Vegetation Management Standards

King County is working with the U.S. Army Corps of Engineers (Corps) to ensure its federal standard concerning vegetation management on federal and non-federal levees is compatible with the ESA requirements for the maintenance of federal flood protection levees. The Sammamish River is serving as a demonstration project for this effort. The County is conducting hydraulic modeling, river flow gauging, and pilot vegetation management practices to better determine a maintenance standard for flood conveyance while allowing vegetation to flourish where salmonid habitat considerations are paramount.

Mill Creek/Mullen Slough Basin Action Plan

King County is working with the cities of Auburn and Kent to complete the Mill Creek/Mullen Slough Basin Action Plan. The plan will recommend projects and policies to minimize chronic flooding, improve drainage and conveyance conditions, improve agricultural drainage ditches, and enhance riparian and salmonid habitat. The County proposes to complete the draft Plan in late 2002 and will implement the plan through an interlocal agreement among the County and the participating cities.

Road Services

King County maintains roads using new practices that prevent fish habitat degradation (such as pollutant runoff and erosion) and removes barriers to fish passage. King County's efforts to reduce the effects of road construction and maintenance on habitat are discussed below.

Fish Passage Program

King County evaluates culverts that may be considered fish passage barriers and prioritizes them for removal. Culvert replacements and mitigation projects may include the following features:

- Streambed gravel is placed in culverts to provide a constant channel substrate, unaltered stream channel width, and large, passable culverts.

The King County Road Maintenance Section has completed approximately 29 fish passage and emergency culvert projects since 1999. These projects have increased fish passage and decreased the risk for potential road failure problems.

The County plans to remove approximately 15 additional fish barriers in 2002.

- Hydroseeding is used in disturbed areas to prevent the growth of invasive vegetation and stabilize slopes.
- Native plants are established to increase shade, provide a future food base for salmonids and other organisms, and to minimize soil erosion in disturbed areas.

Erosion and Sediment Control During Road Construction

King County has responded to the listing of aquatic species under ESA by increasing inspectors' awareness of the issues related to erosion and sediment control practices. Over the last two years, most construction inspectors have been trained and certified in erosion and sediment control and now have a better understanding of the science behind new techniques and the effects on endangered species and their habitat from poor practices. King County also requires that road construction contractors apply best management practices. King County enforces the phasing of land disturbing operations and implements better cover and containment measures to reduce the use of costly and less effective water quality controls.

In addition to the ESA, the National Pollutant Discharge Elimination System program and the King County Stormwater Manual have required the County to improve its erosion and sediment control practices during construction (see the Stormwater Runoff section of this chapter).

Road Maintenance Fish Surveys

In fall 2001, the County completed fish surveys to determine if fish could successfully pass through replaced culverts. County biologists observed

King County Road Services replaced a culvert under NE Stossel Creek Way that was acting as a fish passage barrier. The culvert replacement project was an immediate success, providing access to habitat that was utilized within 3 months for spawning and rearing. The after photo to the right shows a spawned fish located upstream of the replaced culvert (December 2001).

spawning fish at and upstream of many of the replaced culverts. For example, spring 2002 surveys at Harris Creek culverts revealed juvenile salmonids at and above the replaced culverts.

Regional Road Maintenance ESA Program Guidelines

King County is a member of the Regional Road Maintenance ESA Forum (Regional Forum) and the associated Technical Working Group. These groups produced the *Regional Road Maintenance Endangered Species Act Program Guidelines* (Regional Program) to provide a consistent road maintenance program that would contribute to the conservation of salmonids and other fish species for use by any agency. As a member of the Regional Forum, King County has been working with NMFS and USFWS to obtain approval of the Regional Program under section 4(d) of the ESA (see Chapter 1 for more information on 4(d) rules). The Regional Program was published by NMFS for public comment in the Federal Register in January 2002. Final approval of the Program by NMFS is expected in July 2002 (See Chapter 6, Regional Coordination). USFWS is considering how it would approve the program under ESA.

Additional Fish Habitat Studies and Programs

King County Road Services has accomplished early actions to protect fish habitat that were identified in Return of the Kings, including the following key activities:

Road Crossing Inventory—Since 1999, King County has been collecting information on fish habitat within the road right-of-way to determine current conditions, identify potential projects, and meet monitoring requirements. Mapping of features within the right-of-way continues as part of the National Pollutant Discharge Elimination System and Geographic Information System (GIS) Mapping Program. The County has mapped approximately 2,200 stream-crossing culverts and monitors water quality monthly at 240 of those sites for temperature, conductivity, pH, dissolved oxygen, and turbidity. In addition, the County performs annual sampling at 50 sites for macroinvertebrates and completed approximately 200 habitat evaluations throughout unincorporated King County right-of-way.

Mitigation Project Identification—Sources of candidate projects include existing lists of fish passage impediments produced by other agencies and environmental groups, an inventory and habitat evaluation program for road maintenance, referrals from the King County Drainage Program Tracking System, and requests for matching funds or construction support.

Drainage Project Prioritization Program—The County has developed prioritization criteria for fish passage and habitat to assist in choosing possible drainage maintenance sites. The criteria were based on recommendations from the scientific community and incorporate fish passage, fish habitat, and specific salmon life-cycle needs. The County performs habitat and/or road maintenance drainage assessments in unincorporated King County at known maintenance problem areas and stream crossings that cause passage concerns.

Underground Storage Tank Removal Program—The County added overhead canopies to fuel stations to reduce stormwater and groundwater contamination and updated or removed all known fuel tanks at transportation facilities.

Grading Permit Application for Programmatic Road Maintenance—The Department of Development and Environmental Services issued a programmatic permit for routine County road maintenance activities that are performed using best management practices that prevent impacts to fish habitat.

Pit Site Compliance Program—This program supplies permit support for King County Road Maintenance pit sites in obtaining required permits for surface mining, clearing and grading, building, forest practices, and other types of activities. This support includes collecting the data needed for permits, negotiating with agencies, conducting public forums, and addressing compliance monitoring requirements. This program operates in support of the design groups to provide information to meet the County's stormwater manual design standards and permit design requirements.

Stormwater Pollution Prevention Practices—The County has completed eighteen pollution prevention plans related to road maintenance; implementation is ongoing.

Stormwater and Groundwater Monitoring Plan—In association with storm events, King County collects water quality samples and field data for turbidity, temperature, oil, and grease at seven active permitted pit sites.

King County Road Standards—A draft of King County's road standards, revised to better protect fish habitat, is currently out for public review and comment.

Spill Response and Hazardous Waste Program—This ongoing program manages waste, miscellaneous spills, and unknown materials found in the road right-of-way that may affect fish habitat.

Field Research—King County Road Services obtained 10(a)(1)(A) permits from USFWS and NMFS under ESA. These permits allow scientific data collection and fish exclusion activities during Road Services construction and maintenance.

Timber Management Plan—The Road Division, in cooperation with the King County Department of Natural Resources and Parks, is currently developing a standardized timber management plan for each forested site it manages. In the interim, timber sales have been halted.

Forests, Parks, and Open Space

King County recognizes that forests, parks and undeveloped open spaces protect natural hydrologic systems, healthy streams, and fish and wildlife habitat. The County's 2000 Comprehensive Plan (*King County Comprehensive Plan 2000: Shaping Tomorrow*) updated policies placed a greater emphasis on protecting the forest land base, promoting an ecosystem approach to forest management, minimizing land use conflicts through incentives, and managing forestland conversions. Executive Sims signed an executive order in 2001 directing County departments to implement forest policies in the Comprehensive Plan. In addition, the County has instituted a multifaceted program to protect forests through acquisition and encouraging private retention of forestland.

Forestland and open space conservation protects key ecosystem functions including terrestrial and aquatic habitat and water resources. King County's forest incentive programs are an innovative example of public and private partnerships for conservation.

Natural Lands Management Program

Public acquisition of natural resource lands is a significant tool for protecting and preserving fish and wildlife habitat and overall ecological functions. Over the last year, approximately one-third of King County's 24,000 acres of park land was transferred to a new Natural Lands Management Program. Under this program, the County now manages approximately 10,000 acres of County-owned land for ecological and resource values, including waterways, forestland, and agricultural land, and habitat restoration areas.

King County manages over 50 ecological sites primarily for habitat value. The County developed site management plans in the Griffin Creek, Bear Creek, Green River, and Cedar River natural areas. Guidelines are being developed to protect and enhance natural systems on additional sites, and

to provide protection for ESA-listed species in particular. This program is preserving some of the highest quality fish habitat in King County.

Where public use does not compromise these systems, King County incorporates low-impact passive recreation, interpretive, and education opportunities into the site plans or guidelines. Resource coordinators in the Parks and Recreation Division of the Department of Natural Resources and Parks currently implement the day-to-day management of the lands. Resource coordinators manage site inspections, invasive weed removal, restoration projects, trespass issues, trash removal, and protection of the natural resource values.

Resource lands are managed for forestry and agriculture. On five sites, the County developed forest stewardship plans that protect natural resources and streams. Site management plans were developed for two parcels of agricultural land. All of these plans address site needs to protect endangered species.

Table 2-1 shows resource lands purchased in the last two years by King County to protect habitat and open spaces. Acquisitions are frequently coordinated by the Basin Stewardship and Flood Hazard Reduction programs.

Table 2-1. Land Acquisitions

Land Type	Dollars	Acres
2000 Acquisitions		
Riparian	3,336,350	744
Watershed	620,000	472
Floodplain buyout	640,000	3
2001 Acquisitions		
Riparian	5,883,500	408
Watershed	6,916,000	756
Total	**17,395,850**	**2,383**

Forest Stewardship Planning

The County works with private landowners to assist with forest management and to encourage long term forest stewardship. The County offers a ten-week forest stewardship class three times a year, each in a different area of the County. Instructors cover topics such as

From 1999 to 2001, more than 150 landowners attended forest stewardship planning courses. The courses and other efforts resulted in completion of 115 management plans covering more than 2,500 acres of forestland.

forest health and silviculture; managing forests for wildlife and habitat enhancement; special forest products; and identifying and implementing goals and objectives. Upon completion of the course, landowners may be eligible to enroll in one of the King County forest incentive programs (see description below).

Forest Conservation Incentive Programs

Tax Incentive Programs

King County implements the state current use taxation programs (RCW 84.34) to encourage private forest conservation. Through these programs, landowners receive a reduction in property taxes for their conservation efforts. Table 2-2 shows the properties and acreage enrolled in the Public Benefit Rating System and Timberlands Programs from 2000 to 2001.

Encouraging private forestland conservation in King County.

Table 2-2. Properties and acreage enrolled in the Public Benefit Rating System and the Timberlands Programs

Year	Public Benefit Rating System		Timberlands	
	Properties	Acreage	Properties	Acreage
2000	36	188	15	177
2001	45	400	11	147
Total (including years prior to 1999)	**426**	**4,715**	**246**	**2,875**

Transfer of Development Rights

The King County Transfer of Development Rights Program balances habitat preservation goals with growth management objectives by transferring residential development potential from rural areas and focusing growth in urban areas where urban services exist or can be readily provided.

Under this voluntary program, sending-site landowners receive financial compensation without selling their land in exchange for a permanent

conservation easement that maintains the property in forestry, farming, open space, regional trails, or habitat.

The Transfer of Development Rights Program is successfully moving development from rural and environmentally sensitive areas to urban sites. Since its inception in 1998, King County has qualified and/or certified 21 sending sites totaling 1,578 acres and 561 credits. Certified sending sites are fully protected with a conservation easement. Approved sending sites are awaiting buyers. The County has transferred five development rights and those rights have been extinguished. Another 120 development rights are in permit review and, if approved, will be sent to 14 potential urban receiving sites that have been identified by private developers.

King County Rural Forest Commission

The County provides staff support to the King County Rural Forest Commission, a group of volunteers representing diverse interests who advise the County on forestland conservation and forestry issues.

Conservation in the Forest Production District: Evergreen Forest Trust

In 2002, a newly formed nonprofit group, the Evergreen Forest Trust, negotiated with Weyerhaeuser Company the purchase of the 100,000-acre Snoqualmie Tree Farm. If the transaction is completed as anticipated, 40 percent of the County's privately owned forestland in the Forest Production District will remain in forestry forever. The Trust would set aside buffers around aquatic systems within which forestry will be prohibited, thereby offering additional protection to fish and wildlife.

Reducing the Use of Landscape Chemicals

King County reduced its use of herbicides by 50 percent during 1999-2000 through integrated pest management. An additional 30 percent reduction occurred in the following year between 2000 and 2001.

King County continues its efforts to incorporate integrated pest management principles in its internal landscape management activities as directed by a 1999 Executive Order. Integrated pest management is a well-established, holistic approach to managing pests and landscapes. It seeks to prevent or address pest problems by employing a wide range of strategies, generally using chemical pesticides only as a last resort. This program helps keep contaminants out of waterways and fish habitat.

Some of the landscape management activities that use integrated pest management principles include hand pulling of weeds, using mechanical tools such as flame weeders and weed wrenches, and applying large amounts of mulch for weed suppression. The staff continues to actively consider alternative methods, practices, and products.

King County promotes integrated pest management, reduces pesticide use, and provides technical assistance to the community. The County has developed a professional certification for landscapers that stresses minimal chemical use and has trained school maintenance staff on integrated pest management, promoted the Green Gardening Program, and worked with the Washington State Department of Agriculture on home pest remedies and herbicide-contaminated compost. King County will continue to work with schools, suburban cities, other governments, and homeowners to encourage the use of integrated pest management and the reduction in pesticide use.

Reducing pesticide use is labor intensive and requires an increase in staff time. King County will seek additional funding for integrated pest management and use landscape designs that require less intensive maintenance and less pesticide use. King County will increase efforts to promote less manicured landscape designs in County parks and open spaces.

Agriculture and Livestock Programs

Agricultural landowners, King County, and the King Conservation District have continued their efforts to improve agricultural practices to better protect and conserve salmonids under the ESA.

Dairy Water Quality Management

All 43 dairies in King County are on schedule to meet the June 2002 requirements of the state Dairy Nutrient Management Act to keep contaminants out of rivers and streams. The King Conservation District reports that farmers are implementing dairy plans to control contaminants. The King Conservation District and farmers have completed nine new plans and installed three new manure lagoons.

Drainage Maintenance

King County revised its administrative rule on agricultural ditch maintenance best management practices in 2001. A number of

landowners, the King County Agriculture Commission, and King County completed a proposal on near-term regulations for commercial agriculture. The proposal includes removal of the current exemption for dairies in the Livestock Management Ordinance, removal of the exemption for fencing in the Snoqualmie floodplain, and continuation of the agricultural Drainage Maintenance Rule.

King County conducted a drainage maintenance project to test its new best management practices. King County and the Washington Department of Fish and Wildlife worked together to refine monitoring, practices, mitigation, and technical assistance needed for the project.

Livestock Ordinance

Farm Plans

Livestock owners use best management practices on their farms (such as installing a fence at least 25 feet from the stream) in compliance with the Livestock Ordinance. King County granted 28 livestock owners and farmers more than $106,000 through the Rural Drainage Program Agriculture Best Management Practices Cost Share Program. This program provides landowners funds to implement water-quality related best management practices prescribed in their farm plans. The King Conservation District and farmers completed 59 farm plans that will help prevent livestock impacts to fish habitat.

Enforcement

King County responds to complaint calls under the Livestock Ordinance. In 2001, all but two of approximately 30 landowners cited came into compliance.

Farmland Preservation Properties

King County developed principles to help resolve potential conflicts among fish protection and recovery, flood projects, and the covenant and deed restrictions on Farmland Preservation properties. These properties are protected to prevent conversion and maintain their long-term viability and use for agriculture.

Conservation Reserve Enhancement Program

The King Conservation District Conservation Reserve Enhancement Program provides compensation to landowners that provide a forested

buffer to fish habitat. The King Conservation District completed its first contract with a landowner in the County in 2001, and began negotiations on a second contract.

Participation in the State Agriculture, Fish, and Water Process

The County continues to participate in the State Agriculture, Fish, and Water process. One outcome of this process will be a manual titled, *A Maintenance Manual for Agricultural Watercourses in Northwest Washington*. The manual will include farm practice standards for ESA compliance (pending federal approval) and related research will be used to ensure effective mitigation of agricultural ditch maintenance.

Community Habitat Restoration and Stewardship

King County works with individuals and communities to protect and restore habitat. Beyond the County's programs, there is an ongoing need for active habitat restoration and stewardship. Citizen participation is fundamental for this to succeed.

Basin Stewardship

King County has seven basin stewards who help restore important watersheds throughout King County. These stewards are located in the Sammamish, Snoqualmie, Lower Cedar, and Green River watersheds; the Bear Creek, Issaquah Creek, and May Creek stream basins; Vashon and Maury Islands; and the Enumclaw plateau.

Executive Ron Sims works with volunteers on Sammamish Releaf, an ongoing effort to restore the banks of the Sammamish River.

Basin stewards facilitate habitat acquisitions and restoration projects by working with land owners, community members and technical experts to identify and prioritize actions; by raising funds through development of grant applications; and by working with County project engineers and ecologists and other agencies to make sure that completed projects are consistent with basin and watershed goals.

The basin steward program is instrumental in securing state and federal funds for habitat acquisition and restoration projects. The stewards also work with public outreach and volunteer restoration programs described in this chapter and review development proposals.

King County works with community groups, such as the Girl Scouts, to restore fish habitat.

Natural Lands Volunteer Program

The Natural Lands Volunteer Program responds to ecological and natural resource needs in rural areas. This program has included volunteers planting riparian native trees and shrubs, conifer tree seedlings, weeding, and mulching for weed control, and trail maintenance. More than 300 different groups participate each year in the volunteer program, including business such as the Boeing Company and Windermere; non-profit groups such as Washington Trails Association and Mountains To Sound Greenway; youth groups such as the Boy Scouts and Girl Scouts; public and private schools; churches; and community service clubs. King County also educates the volunteers on natural resource protection, land ethics, and the use of native plants in their own backyards.

Grant Programs

Giving citizen groups the funds they need for projects of their own design and creation is an important way that the County fosters habitat stewardship. To do this, King County administers several grant programs and serves as a broker for federal and state funds that are passed on to local groups. The County administers numerous grant programs including the Community Salmon Fund, Waterworks, Small Change for a Big Difference, Urban Reforestation, and Habitat Restoration Grants.

Total people involved in hands-on restoration projects in 2000-2001: 4,723 (26,843 hours).

2000-2001 King County habitat restoration activities, in cooperation with other jurisdictions and volunteers, included the following:

- *2,611 volunteers participated in restoration projects, including plantings, maintenance events, and plant salvage activities (approximately 3,343 hours).*
- *Volunteers salvaged 9,560 plants worth $22,275.*

  98 volunteers worked at the native plant holding facility (340 hours).
- *Volunteers planted 19,454 plants along local streams and rivers.*

924 citizens participated as Habitat Partners in restoration site maintenance (618 hours total).

Grant information is available at:
www.dnr.metrokc.gov/topics/awards-grants/AWD topic.htm.

King County also participates in grant programs for salmon recovery. For example, grants awarded by the Washington State Salmon Recovery Funding Board in April 2002 will enable the County to protect hundreds of acres of valuable watershed habitat. The Board awarded seven grants totaling $2.8 million for salmon habitat projects in King County. See Chapter 7 for further discussion on habitat funding.

Land Use Planning and Critical Areas Protection

King County has ongoing programs to revise its Comprehensive Plan policies and is reviewing its Shoreline Management Program and critical areas protection regulations. The listings of Puget Sound chinook salmon and bull trout as threatened species under the ESA gave additional importance to this evaluation.

King County and its cities review and update their respective comprehensive land use plans and regulations to comply with the goals of the Washington State Growth Management Act and emerging land use issues. These land use plans are guided by countywide planning policies that establish a countywide vision for planning and land use decision-making. The King County Council adopts the countywide planning policies recommended to it by the Growth Management Planning Council. For more information visit the web site:
www.metrokc.gov/exec/orpp/compplan.

The Growth Management Act requires local governments to consider the best available science when developing policies and regulations to designate and protect critical areas, such as wetlands, steep slopes, and fish and wildlife habitat conservation areas. King County updated the King County Comprehensive Plan in 2000 (*King County Comprehensive Plan 2000: Shaping Tomorrow*). The update established a new set of ESA policies that guide how King County participates in and implements the region's efforts to protect and enhance fish habitat. Comprehensive Plan policies E-165 through E-179 address fish and wildlife habitat, and policies E-174 through E-176 address ESA listed species specifically.

Updating King County's Environmental Regulations

King County has analyzed its existing regulations, evaluated the Tri-County Model and best available science, and is drafting legislation to update County regulations.

In keeping with the Executive's conservation strategy, King County is integrating regulatory programs to carry out the County's obligations under the ESA, the Growth Management Act, and the federal Clean Water Act. King County has determined that the most effective means to protect habitat of Puget Sound chinook salmon and bull trout is to rely on the County's authority under the Growth Management Act to adopt critical area regulations. In the coming months, King County will begin a public involvement process to consult with property owners, environmental organizations, the business community, the Tribes, and the general public over the direction those regulations should take. The King County Executive expects to finish this process and have a completed proposal to submit to the King County Council by the end of 2002.

Sensitive Areas Code

The King County Sensitive Areas Code establishes protective regulations for streams, wetlands, and other important habitats. Since 1990, King County has limited the nature and type of development that can occur within or adjacent to streams and wetlands, steep slopes, and other sensitive areas. The highest level of protection is given to streams that are used by salmonids. More protective regulations apply to highly productive basins such as the Bear Creek basin, which contains some of the highest quality habitat in the County.

In May 2000, King County adopted public rules to provide greater predictability for determining when streams should be treated as salmonid-bearing waters and receive the highest standards of protection. The rules are based on standards adopted by the Washington State Department of Natural Resources. The public rules also ensure that public agencies consider alternatives to development proposals and identify the alternative that will have the least effect on salmon habitat. The public rules establish similar standards for proposed variances and reasonable use exceptions from regulations.

Clearing and Grading

The Clearing and Grading Code regulates public and private activities that include ground disturbance or vegetation clearing. The code applies even to activities that do not otherwise require a permit. The County has established best management practices for temporary sediment and erosion control on construction sites. During the rainy season, extra measures are required to ensure that sediment does not enter the County's streams and adversely affect water quality and fish.

Stormwater Code

King County adopted stringent stormwater control standards through its stormwater code and surface water design manual. These regulations were implemented to comply with state and federal water quality requirements, and to benefit fish and wildlife habitat. The measures reduce adverse impacts from high flows during storm events and prevent pollutants from entering streams, lakes, and marine areas.

Shoreline Master Program

King County's Shoreline Master Program includes both planning and regulatory elements. The program identifies significant river, lake, and marine waters for special protection and categorizes shorelines according to their existing development and role in shoreline ecosystems. Development within shoreline areas requires a special permit. In addition, King County requires developments that are otherwise exempt from shoreline permit requirements to submit an application for a shoreline exemption to ensure that those development activities comply with Program standards.

King County adopted public rules in May 2000 to provide additional direction on how it would evaluate projects to repair existing docks and bulkheads. The rules set standards that require more fish friendly designs. The County is also doing inventory work to update its Shoreline Master Program.

Enforcement

In response to Return of the Kings, King County established a program for enhanced ESA inspections to control sediment-laden runoff from reaching streams or adversely affecting water quality and fish. When originally implemented, the program included four inspection staff members devoted specifically to erosion control inspections. Although initially established as a special team, King County has integrated the ESA inspection activity into ongoing site inspection programs. The County also added three code enforcement staff positions to enforce development regulations.

In 2000, the rural drainage program provided funding for two additional code enforcement officers for the rural drainage service area. In order to improve enforcement response, the Department of Development and Environmental Services has consolidated the responsibility for enforcement of site development activities into a single management unit. Prior to this consolidation, responsibility for enforcement was spread among all site development staff at the Department of Development and Environmental Services. King County also initiated a 24-hour response

line to take complaints relating to violations of the clearing and grading and sensitive area codes.

Project Review to Protect Fish Habitat: ESA Section 7

ESA Section 7 requires federal consultation for projects receiving federal money and projects requiring a federal permit. The County conducted compliance trainings and briefings in 2001 and 2002 for scientists, project managers, engineers, and technical writers. The workshops and briefings addressed Section 7 science, law, and process; technical writing for biological assessments; Section 7 project management; budgeting; and work planning.

King County departments are responsible for Section 7 compliance. For example, in August 2001, King County undertook a culvert replacement project in the Snohomish River watershed on Harris Creek, a tributary to the Snoqualmie River, under 348th Avenue Northeast (see the Road Services section of this chapter). This project required approval from the Corps under the Clean Water Act. To meet the requirements of Section 7 of the ESA, the County's Road Services Division submitted a biological assessment of the project to the Corps, NMFS, and USFWS. This project eliminated the last fish passage barrier identified on Harris Creek. The culvert replacement program on this creek was initiated in 1990 with the Washington State Department of Fish and Wildlife.

Significant improvements in awareness and coordination resulted in successful consultations with NMFS and USFWS and approved construction for all priority 2002 County projects. King County works with NMFS and USFWS to clarify requirements and obtain programmatic coverage under ESA Section 7.

Chapter 3 Public Outreach and Education

King County helps individuals, communities, businesses, and governments learn about and care for public and private land, waterways, and watersheds. Outreach and education programs help to develop community partnerships throughout the County, and encourage individuals to take part in conservation.

King County produces public information materials on fish habitat protection and related topics, from natural lawn care to safe disposal of household hazardous waste. These outreach and education programs are important in developing King County's conservation partnerships. King County's 2000-2001 outreach and education accomplishments are described below. Additional habitat and volunteer programs are described in the County's report, Return of the Kings (March 1999) and *ESA Overview: King County ESA Progress Report 1998-2000.*

Education Programs

King County conducts many education programs on fish and wildlife habitat protection and restoration, including the groundwater education program, hazardous waste management program, parks ambassador and interpretive programs, basin steward program, and others.

Groundwater Education Program

The King County Groundwater Education Program was initiated in 2001. It provides presentations on the relationship between groundwater and fish habitat at various educational and public events, including the Northshore School District Watershed Festival, Water Festival 2001 (Highline Community College), the Meridian Elementary (Kent School District)/Soos Creek Science Fair, the Kids Day at Renton River Days, and Salmon Homecoming at the Seattle Aquarium, Renton River Days, Issaquah Salmon Days, Vashon Island Strawberry Festival (Water District 19), Vashon EarthFair, North Bend Alpine Days, and the Arts in Nature program at Camp Long. King County made classroom presentations at 33 schools in 11 districts. As a result of these presentations, the program educated an estimated 2,800 students.

Hazardous Waste Management Program

The Hazardous Waste Management Program works to protect water quality and fish habitat through the reduction of residential pesticide use. Since 1997, the Natural Lawn Care Program, a cooperative effort with the King County Department of Natural Resources, Seattle Public Utilities, and other public agencies, has used advertising, media events, brochures, and community outreach to encourage people to change their lawn care methods. By adopting natural lawn care methods, the use of pesticides, fertilizers, and water is reduced.

King County encourages people to change their lawn care methods to protect fish habitat. See *http://www.metrokc.gov/hazwaste/house/lawncare.html*.

King County worked with 15 suburban cities to provide information on pesticide-related topics to the cities' residents. The purpose was to increase awareness of the risks of pesticides and reduce pesticide use. Each city mailed postcards to 622,000 residents. Those who read the cards were more likely to:

- *Select a plant because it was resistant to insects and/or diseases)*
- *Use an organic or slow-release fertilizer)*
- *Pull or spot-spray weeds*
- *Amend soil with compost or other organic matter*
- *Use mulch on flower beds or landscape plants*
- *Stop using weed and feed products on the lawn*

The Hazardous Waste Program works with the Washington Association of Landscape Professionals on an advanced horticultural management endorsement. Landscapers who pass a field test on environmentally friendly lawn care practices will be certified by the association and promoted by King County and the City of Seattle. The endorsement was developed as part of the association's Certified Landscape Technician program. The Associated Landscape Contractors of America approved the program and it now stands as a national model.

Parks Ambassador Program

The Park Ambassador Program provides the opportunity for volunteers to steward remote King County natural lands. The ambassadors are uniformed and perform wildlife monitoring, restoration maintenance and

trail inspections, among many other duties. They report on actions that need correcting, such as illegal trail building and poaching in County forests and streams.

Parks Interpretive Programs

King County conducts interpretive programs to teach citizens about natural resources and fish and wildlife. In 2001, two Cycling for Salmon events were organized on the Cedar River Regional Trail. Participants learned about salmon while viewing the fish from their bicycles. Another parks program (You're the Water Scientist) focused specifically on testing water at two county parks. Other programs included Holiday Visit with Salmon, Wetlands Are Alive, Just Another Day at the Beach, and Searchin' for Salmon. Total program attendance in 2001for 11 programs was 161 people (adults and children).

As an educational outreach tool, the on-going Stream Connection program continued to attract large numbers of school classes in 2001. Focusing on salmon and water quality, the program involved 1,487 students in 64 programs. Primary field sites were county parks near Renton, Woodinville, and Carnation in the Snoqualmie Valley. The Wetland Connection program hosted 1,523 students in 60 programs. Field sites included Marymoor Park (Redmond) and Soos Creek Park (Kent). The Puget Sound Connection program, with its emphasis on marine habitat, hosted 4,172 students in 1,765 programs.

Basin Stewardship Program

As discussed in Chapter 2, King County has seven basin stewards who are based in important watersheds throughout King County. The basin stewards act as primary contacts for community members and groups interested in pursuing habitat protection or restoration on their properties. Because of their geographic focus, the stewards are able to establish long-lasting relationships with community members and nonprofit groups helping to guide the community's environmental stewardship.

Overall Accomplishments

King County's 2000-2001 public involvement programs achieved the following:

- 81 volunteers served as Cedar River Naturalists (30 hours each; 2,430 hours total).

- 6,998 citizens visited the four Cedar River Salmon Journey sites.
- 195 volunteers served as Beach Naturalists (40 hours each; 7,800 hours total).
- 28,804 citizen contacts were made by Beach Naturalists at seven beaches.
- 49 team leaders were trained for fall plantings at five trainings (108 hours total).
- 651 residents attended three naturescaping workshops.
- 1,000 citizens heard 43 ESA speaker presentations.
- 60 citizens attended a Lake Washington/Cedar/Sammamish watershed conditions workshop in May.
- 10,700 students attended classroom water quality presentations.
- 275 students were educated in other classroom or field presentations.
- 3,800 students were educated through the Wheels to Water program.
- 155 lakeside residents monitored small lakes (3,050 hours total).
- 14 volunteers counted kokanee (70 hours total).
- 340 volunteers counted salmon (3,080 hours total).
- 19 volunteers monitored Lake Sammamish (492 hours total).
- 237 volunteers stenciled 1,315 storm drains (420 hours total).
- Groundwater presentations were made in 33 schools to more than 2,800 students.

Outreach Publications

To aid teachers in educating their students about environmental issues, King County published its *Programs for Educators 2001-2002 School Year Edition* booklet, which is a valuable resource for environmental educators. The booklet includes updated listings of action projects, classroom programs, curricula, field trips, grants, Internet resources, newsletters, teacher workshops, and videos.

Staff helped create and maintain the Interactive Salmon Quiz on King County's web site (*www.metrokc.gov*). By visiting the site, more than 600

citizens tested their knowledge and learned about salmon, watersheds, and how to protect water quality. King County staff updated the two popular brochures Home and Garden Hints for Clean Streams and Salmon and Get Your Feet Wet (a brochure that lists all King County volunteer opportunities). The staff also updated the Community Stewardship Network Directory.

More than 14,000 Spring Into Action flyers and more than 18,000 Fall for Salmon flyers were distributed in 2001. The flyers offered dozens of ways for King County residents to get involved in protecting water quality. Both flyers listed seasonally appropriate tips for citizens to employ at home (water conservation tips, natural gardening tips, information about successfully disposing of household hazardous waste) as well as some of the volunteer activities mentioned above.

A watershed video, Watershed H2ope for the Future, was produced as a follow-up to the successful Natural Connections video and curriculum in 2001. Several hundred copies of the video were produced and distributed to teachers in King County. This video is also available in libraries throughout the county. Additionally, the video was featured in a Salmon Information Television program broadcast by more than 20 local cable stations.

Chapter 4 Instream Flows for Fish

Water needs in the region must be met with limited resources. King County recognizes that the demand for municipal water supply at the local and regional levels must be integrated with the instream flow requirements for fish. Additional work is necessary to develop a better understanding of the relationship between municipal water supply, groundwater, surface water, and fisheries life cycles. King County is developing new scientific information on instream flows and working to protect aquatic habitats.

Water Supply Planning and Fish Habitat

King County is a water utility purveyor of reclaimed water and an operator of one small water system, and considers regional water supply issues when reviewing and approving water system plans and water availability requests in the development permitting process. King County has long supported development of a regional water supply plan to address instream flows, and is participating in the following water supply planning efforts.

2001 Central Puget Sound Regional Water Supply Outlook

King County participates in the Central Puget Sound Water Suppliers' Forum of water supply utilities and purveyors, and contributed to the writing and publication of the *Central Puget Sound Regional Water Supply Outlook*. The Outlook is the forum's initial effort in preparing for collaborative water supply management. The Outlook provides a regional water supply projection for 20- and 50-year periods, and identifies alternative ways for meeting regional needs. These alternatives include higher levels of conservation and the use of resources such as reclaimed water. The Outlook recognizes the need to address fish habitat requirements, and relies heavily on watershed-based technical information on flow problems for fish.

The Outlook identifies some alternative ways to meet the water supply needs of people in the region.

Central Puget Sound Initiative

King County is participating in Governor Gary Locke's Central Puget Sound Initiative to develop a long-term plan to address regional water resource demands. The initiative builds on technical information and analysis in the Outlook (see above), existing water and watershed planning, and collaboration between local governments, Tribes, and state agencies. Within this initiative, King County will contribute to state legislative strategies on water supply and instream flows.

Working with the City of Seattle

King County worked with Seattle Public Utilities to develop a report summarizing the water supply and projected demand specific to King County for 2001 through 2020. The February 2002 report uses technical information from the regional Outlook report to characterize water quantity and quality issues facing the County, including instream flows for fish.

King County took part in activities of the Instream Flow Commission created as part of Seattle's Habitat Conservation Plan for the Cedar River to resolve instream flow issues. The Cedar River is the major source of King County's domestic water supply, in addition to being the habitat of several species of salmon. The County will continue collaborating with the City of Seattle to develop better habitat and flow conditions within King County's watersheds.

Reusing Water to Reduce Demand

The goal of the County's Water Reuse Program is to use reclaimed water to help meet the needs of this region's residents. Water reuse decreases the demand for drinking water and reduces the withdrawal of water from the rivers and streams that serve as fish habitat. At present, a limited amount of reclaimed water is treated and redistributed for landscape and agricultural irrigation, heating and cooling, and industrial processing.

King County Executive Ron Sims discusses the benefits of reclaimed water at the South Treatment Plant in Renton. Reclaimed water is wastewater that gets treated to such a high level that it can be used safely for non-drinking water uses such as irrigation.

A five-year Water Reuse Work Plan was completed in December 2000, and two primary implementation projects are under way: the Sammamish Valley Reclaimed Water Production Facility and the Water Reuse Technology Demonstration Project.

Sammamish Valley Reclaimed Water Production Facility

Plans are underway to site a reclaimed water production facility in the Sammamish Valley. Pictured here is a demonstration garden irrigated with reclaimed water the summer of 2001.

King County is developing a satellite reclaimed water treatment facility to evaluate long-term opportunities to use reclaimed water within the region. In 2000, a Stakeholder Task Force evaluated the cost per unit of reclaimed water, regulatory issues, community impacts and support, and integration of a satellite plant with other County projects. The Sammamish Valley Reclaimed Water Production Facility, which will produce between 1 million and 3 million gallons per day of water for irrigation, was selected for implementation. Predesign of the facility began in December 2001, and the facility is scheduled to be operational in June 2004. This facility will provide an alternative source of irrigation water to existing users along the Sammamish River, and improve flow and temperature conditions in the river.

King County will strive to identify additional reclaimed water opportunities during development of the proposed Brightwater wastewater treatment facility.

Water Reuse Technology Demonstration Project

King County began operating a water reuse technology demonstration facility at the West Point Treatment Plant in June 2001. The purpose of the nine-month project is to evaluate the effectiveness, operability, and cost of seven wastewater treatment technologies. The technologies are intended to:

- Minimize the size of a satellite treatment facility
- Reduce the cost and potential impacts of producing Class A reclaimed water at small, upstream satellite plants for commercial and irrigation uses

- Cost-effectively remove nutrients, pathogens, organics, and other contaminants from wastewater in order to make reclaimed water suitable for discharge to freshwater, thus supplementing surface water supplies.

Groundwater Protection and Fish Habitat

Most of the streamflow in the typical streams and rivers of the Puget Sound region is derived from groundwater. Groundwater inflow accounts for 60 percent to 90 percent of the annual flow in most streams in the region. This percentage often increases to 95 percent or more during the critical months of late summer.

Groundwater that discharges into streams and rivers plays an important role in moderating the temperature and chemical composition of streams. Groundwater allows streams to stay relatively cool, even during hot summer weather. Under natural conditions, groundwater also helps to balance and moderate the chemical composition in streams by providing important minerals and nutrients. Because stream ecology is sensitive to groundwater inflow, activities that affect the quality or quantity of groundwater discharge to streams also affect salmon habitat. Such activities may include land development in important groundwater recharge areas, leakage from sewer lines, and groundwater extraction wells.

Groundwater Protection Program

Protection of groundwater resources is part of King County's commitment to conservation. In September 2001, the King County Council adopted Ordinance No. 14214, which provides direction for the County's Groundwater Protection Program. This program contributes to the protection of groundwater that is vital to fish and wildlife habitat, and to the greater ecosystems on which they depend. Key actions of the program include:

Interagency Coordination—Coordinate and collaborate within King County government and with other local, state, federal, and tribal agencies to leverage resources, integrate groundwater protection with the protection of all water resources, and integrate groundwater protection with other public health and safety efforts.

Groundwater Protection Planning and Implementation—Help local communities identify groundwater protection needs and collaborate to

address these needs; and integrate groundwater issues with other local planning efforts, such as growth management plans.

Data Collection and Management—Provide a reliable source of information on the status of King County's groundwater resources, their quality and quantity; develop effective monitoring programs to document trends and provide expert analysis on the conditions of groundwater quality and quantity in King County for planning and other purposes.

King County Groundwater Policy—Foster (review, develop, and recommend) effective groundwater protection policy for the King County area.

Groundwater Stewardship and Education—Provide stewardship services related to groundwater protection; communicate with the larger community to convey the important groundwater issues in King County and what the County is doing to address these issues.

Program Administration and Accountability—Perform general administration tasks for the Groundwater Protection Program. Inform decision-makers about important groundwater issues, and report on King County's response. Evaluate and develop alternative funding sources for stable, long-term protection of groundwater in King County.

In 2002, it will be essential to develop partnerships to maintain and protect King County's important groundwater resources. King County will expand the Groundwater Protection Program by:

- Participating in the activities of Groundwater Protection Committees and working to implement groundwater management plans.
- Identifying and developing long-term, stable funding sources for groundwater protection services.
- Improving groundwater data management, including the ability to evaluate data and identify trends in quality and quantity that may be of concern.
- Developing cooperative projects and relationships within King County and with outside agencies and groups to further the County's groundwater protection interests.
- Responding to localized groundwater issues and developing strategies to address them.

Normative Flows Project

Changes in stream flow can drastically affect fish habitat.

King County is undertaking the Normative Flows Project to better understand how County actions affect flows in rivers and streams. The normative, or natural, flow concept stresses the importance of stream pattern and variation over time. Naturally spawning salmon depend on a complex system of flow magnitude, frequency, duration, timing, spatial distribution, and rates of change. The project includes a science review team of experts in ecology and hydrology, convened through an agreement with the University of Washington. The team's work will allow the County to analyze the ecological consequences of flow regimes. The team's findings will be applied to King County's programs affecting fish habitat.

Low-Impact Development to Protect Instream Flows

King County continues to pioneer and integrate the use of low-impact development techniques in its development requirements and incentive programs to further reduce the impact of stormwater on fish and fish habitat.

Best Management Practices

Low-impact development techniques consist of alternative site designs and runoff control best management practices to reduce development-related changes in natural runoff and groundwater recharge. These best management practices include limiting impervious surface; maximizing forest retention; minimizing concentration of runoff; using pervious areas to absorb runoff from impervious areas; enhancing water retention capacity through soil amendments, rain gardens, and vegetated roofs; collecting roof runoff for irrigation use; and using permeable pavements.

Pervious pavers allow for rainwater infiltration onsite.

Low-impact development best management practices are capable of reducing stormwater impacts that are not addressed through traditional flow control and water quality treatment facilities. For example, flow control facilities can limit the highest peak flows and the amount of time they occur, but these facilities cannot prevent the substantial increases in runoff volume and loss of groundwater recharge that occur when forests are replaced with impervious surfaces and lawns. Increases in volume degrade stream and wetland habitats, and the loss of groundwater recharge reduces summer stream flows and domestic water supplies. Low-impact development may reduce these impacts by retaining more water onsite and maximizing opportunities for infiltration.

Incentives and Requirements

While low-impact development best management practices have enormous potential for reducing the impacts of development, more information and experience is needed on their effectiveness, maintenance, longevity, and public acceptance before full-scale application can take place. King County hopes to gain this information and experience through the incremental application of low-impact development best management practices to new and existing urban developments, and by providing incentives for full-scale application in selected pilot developments.

King County is doing the following to integrate low-impact development best management practices into its regulations and incentive programs:

- King County offers new incentives for reducing impervious surface, retaining forested areas, and implementing other low-impact development techniques. These incentives are discounts to the annual surface water management fee charged to developed properties. In addition, a grant program has been established to share the cost with property owners in the conversion of impervious surface to pervious or pervious-like surface.
- The current *King County Surface Water Design Manual* (1998) contains both requirements and incentives for certain low-impact development techniques. It requires single-family residential roof runoff to be infiltrated or dispersed over pervious areas, and it offers facility sizing credits and exemptions for application of infiltration/dispersion best management practices and the retention of forested areas.
- The next update of the Surface Water Design Manual in 2003 will significantly expand the use of low-impact development best management practices. Their use will be required to the maximum

extent practicable on all new development and redevelopment projects consistent with the 2001 Ecology *Stormwater Management Manual for Western Washington*. The King County manual will specify the maximum practicable level of application based on project type and site conditions.

- The next update of the *King County Surface Water Design Manual* will require infiltration or dispersion of runoff to further reduce the effects of impervious surfaces and cleared areas. This requirement is a major component of the Tri-County Model Stormwater Program.
- The 2002 update of the King County Road Standards will propose further reductions in the width requirements for some road types as well as the elimination of sidewalks on both sides of some roads. Narrow road widths minimize pollutants in stormwater runoff and help to protect groundwater infiltration.

Chapter 5 Gauging Environmental Trends and Improvement

Environmental trends and improvement are gauged using a variety of scientific and land use monitoring tools. Monitoring results inform King County's decisions regarding planning, programs and services. Some monitoring activities specifically evaluate ESA-listed species habitat conditions. Others have dual purposes and evaluate effects on habitat as well as other environmental parameters (such as Clean Water Act water quality monitoring requirements).

The Washington State Growth Management Act seeks to balance fish and wildlife conservation with other Growth Management Act goals. The King County Comprehensive Plan, based on Growth Management Act requirements, is the overriding policy guidance for all major King County regulations and programs. The *2001 King County Annual Growth Report* and the annual *2001 King County Benchmark Report* are two key monitoring mechanisms used to evaluate growth management trends. King County applies data gathered from these reports when it updates the Comprehensive Plan every four years.

This adaptive management approach will be fully developed during the next year so that King County can apply scientific information gained through monitoring and habitat studies to all aspects of ecological and land use management. This chapter inventories the County's current technical studies and monitoring activities, and initial application of adaptive management concepts.

Monitoring

King County conducts a wide range of monitoring programs, including groundwater, agricultural, parks, hydrologic, water quality, mitigation, and project-based programs. Many of these programs are multi-purpose and address more than one environmental parameter.

Groundwater Monitoring

King County's groundwater monitoring focuses on both water quality and quantity. This relatively new program is providing information on groundwater effects in relation to fish habitat.

Ambient Water Quality Monitoring

Frequent sampling and analysis of groundwater is effective in providing early detection of water quality problems that may affect fish habitat. In 2001, the King County Groundwater Protection Program conducted groundwater sampling, collecting samples from 70 groundwater wells. The samples then were analyzed for a wide range of pollutants. In general, the data results indicate there are no contamination issues of concern. King County will continue to track trends in groundwater quality and determine potential effects on fish habitat.

Collecting groundwater samples for analysis.

Water Level Monitoring

Monitoring the water levels in groundwater wells documents short- and long-term fluctuations in aquifers. In 2001, King County monitored approximately 50 wells and found no significant trends in groundwater quantity. King County will increase this monitoring effort in 2002 to gain additional data and to study the effects of groundwater quantity on fish habitat.

Focused Groundwater Sampling

King County sampled groundwater in areas of water quality concern and areas in which additional data were needed for regional water planning needs. The Sammamish River Valley Groundwater Study offers a specific example of focused sampling related to fish habitat.

The Sammamish River is the source of approximately 30 percent of the flow into Lake Washington and provides migratory habitat for listed fish species. Groundwater is a primary source of flow in the river in late summer and early fall. Information from the study will be used to recommend habitat improvements and to inform water management decisions for the Bear Creek basin and the Sammamish River valley.

Data Collection and Management

A central goal for groundwater data management in 2001 was to gather new data while making existing information more accessible and usable. King County accomplished this by compiling the information into a central database. The database allows the County to meet specific project

information needs and improve the general knowledge of King County groundwater. This consolidated groundwater data will be used to better inform policy decisions, including those addressing flows for fish habitat.

Agriculture Monitoring

King County monitors farm plans, implementation of the Livestock Ordinance, and agricultural ditch maintenance. These monitoring programs provide information on the potential effects of agriculture on fish habitat.

Monitoring Farm Plans

The King County Livestock Ordinance calls for the completion of farm plans for those farms with livestock. With the assistance of the King Conservation District, farm owners develop farm plans to implement best management practices that protect environmental features and habitat from the impacts of livestock. The King County Conservation District tracks the implementation of completed farm plans.

Enforcing the Livestock Ordinance

The Livestock Ordinance requires water quality protection practices, such as fencing, to keep livestock out of streams and fish habitat. King County responds to complaint calls regarding noncompliance with the ordinance. To date, all but two of approximately 30 landowners cited as violating the ordinance have changed their practices to better protect water quality.

Ditch Maintenance Monitoring

Fish inhabit many agricultural drainage ditches in King County. The County uses best management practices to maintain these ditches, allow agriculture to be sustained, and minimize habitat impacts. Such practices include removing sediment and controlling weeds to ensure that ditches convey water from low-lying valley agricultural fields to streams.

King County, the Washington Department of Fish and Wildlife, and farmers are working together to improve drainage maintenance practices.

The County is monitoring five ditch maintenance projects that were completed in the last four years, and publishes annual monitoring reports. King County obtained ESA Section 10(a)(1)(A) permits to collect

data on fish activity in agricultural ditches. This monitoring provides important information to understand salmonid use and recovery in the agricultural watercourses in the Snoqualmie River basin. For example, chinook were found in one watercourse which, prior to the maintenance project, had very little water and supported amphibians rather than fish.

Parks Monitoring

King County monitors parks to determine if public use is damaging terrestrial and aquatic habitats. Staff and volunteers monitor the success of restoration projects and noxious weed control. The County also monitors the presence of various species of birds, wildlife, fish, and amphibians in parks. These data are shared with Washington State Department of Fish and Wildlife specialists.

Sammamish-Washington Analysis and Modeling Program

The Sammamish-Washington Analysis and Modeling Program provides scientific data for numerous planning efforts. This program is collecting information, developing scientific tools to better understand the Lake Washington/Cedar/Sammamish watershed, and using these tools to explore resource management options. Tools and information include water and sediment quality monitoring, water quality and quantity modeling, ecological and human health risk assessment, and habitat and biological assessments. Technical studies support wastewater reuse planning, wastewater treatment plant siting, habitat conservation planning for Endangered Species Act compliance, stormwater compliance planning, and watershed basin planning for the recovery of ESA-listed species. These studies include water and sediment quality analysis, water quality modeling, human site use surveys, human health and ecological risk assessment, and habitat and biological surveys.

Green-Duwamish Water Quality Assessment

The Green-Duwamish Water Quality Assessment project is developing analytical tools to evaluate water quality issues in the watershed and to make water quality information available. The assessment will assist wastewater capital planning (including the Combined Sewer Overflow program and Wastewater Treatment Habitat Conservation Plan), Green/Duwamish and Central Puget Sound Watershed planning, stormwater management efforts, and the Department of Ecology's Total Maximum Daily Load program. The scope of work spans water quality and hydrologic monitoring, land use/land cover modeling, water quality and quantity modeling, best management practice evaluation, and

ecological and human health risk assessment. The assessment is a pilot project to explore opportunities to integrate local activities in response to the Endangered Species and Clean Water acts.

Hydrologic Monitoring Program

Since 1988, King County has collected hydrologic data at stream gauges and weather stations. Currently, 60 sites gauge streamflow and water temperatures, 40 sites record rainfall, and miscellaneous other sites monitor water temperature and other water quality parameters. Much of the data are used regionally for watershed studies and fisheries in-stream flow analyses, among other programs. King County shares data with other agencies and provides technical assistance for data collection at sites of mutual interest.

Clean Water Act Monitoring

King County monitors various water quality and biological indicators and reports results under its National Pollutant Discharge Elimination System permits. As discussed in Chapter 2, Protecting and Restoring Habitat, the Washington State Department of Ecology issues two types of permits to King County under the federal Clean Water Act for discharges to surface waters: one for the wastewater treatment system and another for municipal stormwater.

Monitoring streams in King County.

The National Pollutant Discharge Elimination System permits for treated wastewater discharges in King County require daily monitoring of the wastewater effluent for many parameters. The permits require quarterly monitoring of priority pollutants. The King County stormwater permit requires the County to report to Ecology on the many ambient monitoring activities the County undertakes in its lakes, streams and rivers. Ecology must consider the water quality effects of these discharges on species listed under the Endangered Species Act. King County monitoring programs include:

- Nearshore environment surveys
- Land use and land cover assessments
- Benthic macroinvertebrate monitoring
- Water quality monitoring
- Wetland monitoring.

Road Project Mitigation Monitoring

In 1993, King County established a road project Mitigation Monitoring Program as part of the King County Sensitive Areas Ordinance. The monitoring program ensures that stream and wetland mitigation sites meet permit requirements and established performance standards. With the listing of chinook and bull trout under the ESA and in response to changing federal, state, and local regulations, the County expanded the role of the program to monitor preconstruction, construction, and post-construction activities.

This monitoring program entails habitat surveys, juvenile rearing assessments, spawning surveys, fish removal, culvert assessments for juvenile and adult passage problems, and stream surveys. In addition, the program monitors the effectiveness of all conservation measures required of King County road projects by ESA Section 7. This program is intended to help King County minimize the effect of road projects on state and federally listed species.

River Facility Monitoring

King County is monitoring river protection facilities according to a recently completed biological assessment of several projects on the lower Green River. Monitoring data are being collected on the structural integrity of the repair projects, the performance of planting plans, and the presence of salmonids at repaired sites (as compared to unrepaired sites). The data gathered from monitoring will continue to be used as an adaptive management tool to better design future project repairs and meet watershed planning objectives.

Technical Studies

King County is conducting multiple studies to learn more about fish habitat requirements and land use effects on habitat. Studies address agriculture, core habitat areas, fish distribution, and watershed-specific technical issues.

Agricultural Land and Fish Habitat Studies

The National Marine Fisheries Service has issued sampling permits to King County to evaluate best management practices for agricultural drainage maintenance projects. One such permit allows the County to conduct a study with Washington State University on the effects of best

management practices for maintaining drainage in agricultural waterways. These sampling permits were granted under ESA Section 10(a)(1)(A) and allow the *take* of a listed species for scientific study designed to further the propagation and survival of that species.

King County continues to collect the information needed to support a salmon protection program for agriculture. A review of the literature on agricultural streams in the Pacific Northwest was conducted collaboratively with Whatcom, Skagit, and Snohomish counties and with the University of Washington. In addition, a riparian vegetation assessment produced a database for agricultural watercourses and a land cover analysis of the Agricultural Production Districts.

Core Areas Habitat Studies

King County is identifying areas where salmon aggregate for one or more key biological functions, such as spawning and rearing. These habitats, called core areas, and the processes that maintain them will be important factors in management decisions and habitat project selection. King County is identifying these areas in 2002, and will conduct fieldwork in 2003.

Fish Distribution Mapping: Bull Trout Surveys

King County is conducting surveys to determine the presence of bull trout in King County waterways, with a specific goal of determining whether bull trout potentially inhabit streams where the presence of self-sustaining populations has not been confirmed. These areas include selected reaches of the Cedar River, Rock Creek, Cold Creek, Carey Creek, Holder Creek, the Green River Gorge, Soos Creek, and Newaukum Creek. A report is expected to be complete by November 2002.

Watershed Technical Studies

King County is conducting technical studies that support King County programs and regulations and regional watershed planning. Studies are specific to the technical issues identified in the Snohomish watershed, Lake Washington/Cedar/Sammamish watershed, Green/Duwamish and Central Puget Sound watershed, and the Puyallup/White watershed.

Snohomish Watershed

In 2001, King County performed a qualitative habitat inventory on portions of the Tolt and Raging rivers and Griffin Creek. The following

habitat characteristics were evaluated: general habitat condition; riparian (streamside) vegetation; bank condition; the presence of fish, wildlife, and benthic macroinvertebrates (small invertebrate animals that live in the substrate); type of substrate (the cobble, gravel, sand, or silt on the bottom of the river channel); and large woody debris. King County also identified and mapped pools in the mainstem Snoqualmie River downstream of Snoqualmie Falls. Pools play a vital role in providing rearing and refuge habitat for salmon. A report summarizing this fieldwork and previous fieldwork, titled *Snoqualmie Watershed Habitat Conditions Report*, was completed in April 2002.

King County participated in developing a summary report of known habitat conditions for salmonids (salmon, trout, and char) in each of the 63 subwatersheds of the Snohomish watershed. Performance criteria from scientific literature were applied in rating the habitat conditions in each subwatershed as intact, moderately degraded, or degraded. The report, *Salmonid Species Habitat Conditions Review*, was completed in April 2002.

King County contracted with the University of Washington to analyze historical habitat conditions in the mainstem Snoqualmie River. Scientists researched the location of the main channel, side channels, and wetlands, as well as the types of vegetation that grew along the river in the 1870s, 1930s, and today. The County will use the study results to prioritize salmon habitat protection and restoration projects in the Snoqualmie River. A report titled *GIS Mapping of the Historic Condition of the Snoqualmie River* was completed during the first quarter of 2002.

Lake Washington/Cedar/Sammamish Watershed

During 2001, King County published the *Habitat Inventory and Assessment of Three Sammamish River Tributaries: Swamp, North, and Little Bear Creeks*. The goals of the habitat assessment project for the north Lake Washington tributaries were threefold: (1) characterize the habitat quality, primarily for salmonids, (2) establish a baseline for future evaluation of trends in habitat quality and watershed function, and (3) identify and prioritize habitat protection and restoration areas. The results are included in the Lake Washington/Cedar/Sammamish Habitat Limiting Factors Report and will also benefit land use and transportation planning, and stormwater management.

In 2001, King County inventoried instream habitat in Bear Creek, Cottage Lake Creek, Cold Creek, and Struve Creek in the Bear Creek basin. These inventories contain information on riparian composition, large woody debris, channel morphology, riffle, pool and glide habitat, and spawning

substrate. King County also formed a partnership with the City of Kirkland in 2001 to complete habitat inventories on Juanita Creek. Reports on the Bear Creek studies and the Juanita Creek studies have been completed.

King County worked collaboratively with Seattle Public Utilities, Washington Department of Fish and Wildlife, and the Muckleshoot Indian Tribe to survey chinook spawning in the Cedar River and Bear Creek basins. This ongoing effort to document the timing, abundance, redd distribution, fecundity, life history strategies, and habitat utilization of fall chinook provides critical baseline information for regional salmon recovery efforts as well as environmental impact analysis for King County projects. The following three reports will be completed and available on-line in the summer of 2002:

1. The distribution of fall chinook redds in the Cedar River basin.
2. Spawning success of fall chinook in two tributaries of the Sammamish River.
3. 2001 salmonid escapement for the Lake Washington basin.

Green/Duwamish and Central Puget Sound Watershed

King County conducted the Lower Green Seining Study to determine the timing and distribution of juvenile salmonid outmigration in the lower reaches of the Green River. A report describing the results and implications of this study will be completed in 2002. Field studies will continue during the 2002 outmigration.

As discussed previously in this chapter, the Green/Duwamish Water Quality Assessment is monitoring and modeling selected water quality parameters (e.g., bacteria, metals, sediment, temperature, and dissolved oxygen) in the Green/Duwamish and Central Puget Sound watershed to assess current and future conditions.

Puyallup/White Watershed

King County is conducting a monitoring program on East Hylebos Creek in the Puyallup/White watershed to determine the general status of water quality, stream flow, and aquatic habitat conditions in the lower reaches of the East Hylebos Creek system. This monitoring study is consistent with those done by the City of Federal Way and the Hylebos Stream Team on the north and west forks of Hylebos Creek. The studies will be used in an updated Hylebos Basin Watershed Plan. Monitoring will continue through June 2002, and a final report is due by summer 2002.

Adaptive Management

Adaptive management applies research and monitoring data in the course of making decisions and conducting programs that affect ecosystems and habitat. Despite the vast body of knowledge on salmon biology, the science of fish recovery is still evolving. Science has been, and will continue to be, refined through ongoing research. The County's understanding of habitat restoration and protection tools is also evolving. These tools include land use and watershed planning, regulations, stewardship programs, best management practices, and habitat restoration and acquisition. King County will evaluate new scientific information and adapt regulations and conservation methods accordingly.

Besides planning for growth and protecting critical areas, comprehensive planning is a fundamental tool and the most formal process for conducting adaptive management. Currently, adaptive management is initiated informally throughout County departments. Every year King County makes technical amendments to the King County Comprehensive Plan, and every fourth year the County conducts a complete review of the Comprehensive Plan. The next four-year amendment will occur in 2004. As new scientific information on fish habitat is generated and the effectiveness of programs is gauged through monitoring, the Comprehensive Plan will be updated and revised, again incorporating adaptive management.

There is much work to be done to develop more formal adaptive management processes. King County will continue striving to apply the ecological principles identified in Return of the Kings throughout all County programs. Applying these principles will involve coordinating programs to coincide with fish life cycles; prioritizing projects and programs to protect and restore habitat in balance with the protection of public health and safety and economic development; and monitoring, evaluating, and revising programs for results.

Chapter 6 Regional Coordination

Salmon recovery and ecosystem conservation in Puget Sound require a shared vision. Restoring threatened fish populations is the responsibility of citizens, stakeholders, and all forms of government. For more than four years, King County has been a leader in the Tri-County Salmon Conservation Coalition, watershed planning, and the Puget Sound Shared Salmon Strategy.

Tri-County Salmon Conservation Coalition

Tri-County Model 4(d) Rule Response Proposal and Biological Review

In 1998, the Executives of Snohomish, King, and Pierce Counties convened the Tri-County Salmon Conservation Coalition as a voluntary assembly of local governments, Tribes, environmental coalitions, and business coalitions for the common purpose of recovering salmon and responding to listings under the ESA. The Tri-County region is Washington state's economic engine; such a major urban region has never faced the challenge of responding to ESA listings while managing other growth management challenges.

Since its inception, the Tri-County Coalition leadership has been instrumental in securing over $70 million in federal funds for salmon conservation in Washington state. The Tri-County Coalition will continue to build political support for ongoing federal funding, and will also work to develop new regional and private funding sources.

A second major accomplishment was the development of the Tri-County Model 4(d) Rule Response Proposal. The Tri-County Model program is an unprecedented model salmon conservation program that uses the Washington State Growth Management Act and federal Clean Water Act to better protect salmon. On April 19, 2002, the Tri-County Coalition issued the *Biological Review: Tri-County Model 4(d) Rule Response Proposal* (Biological Review). The Biological Review is a third party evaluation of the program prepared by Parametrix, Inc. with input from NMFS, USFWS, and technical staff from Tri-County jurisdictions. It evaluates the degree to which the Tri-County Model could contribute to salmon conservation and analyzes how the Model meets the specific requirements of NMFS' 4(d) rule *take* limit for development activities. King County will use the Biological Review as a resource when

considering best available science, as required by the Growth Management Act, to protect critical areas.

A report titled *Assessment of Chinook Salmon and Bull Trout Spawning Areas in Tri-County Urban Growth Areas: Methods, Assumptions and Findings*, produced by King County in 2002, measures and evaluates chinook stream reaches in the Tri-County area. These data will be particularly useful to local jurisdictions as they develop critical areas regulations and conservation plans. This report is available as Appendix K of the *Biological Review: Tri-County Model 4(d) Rule Response Proposal* at *www.salmoninfo.org*.

King County Use of the Tri-County Model and Biological Review

King County is using the information in the Tri-County Model and the biological review to modify its management programs and regulations to promote conservation of salmon and reduce the risk of causing or contributing to *take* (prohibited by the ESA). The elements of the Model and proposed King County implementation steps are shown in Table 6-1; King County implementation of these elements is discussed throughout the chapters of this report.

Table 6-1. King County implementation of the Tri-County Model

Tri-County Model Program	King County Implementation
Land Management Program	Adapting elements of the Land Management Program in proposed critical areas regulation update (see Chapter 2)
Stormwater Program	Updating the *King County Surface Water Design Manual* to provide protection equivalent to the Washington State Department of Ecology's *2001 Stormwater Management Manual for Western Washington* (see Chapter 2) Maintaining the current high quality of stormwater management programs for investigation, inspection, enforcement, maintenance, source control, and public education and outreach Fine tuning standards, practices, and programs through stormwater plans, and making strategic capital improvements Increasing the use of low-impact development techniques to avoid or reduce stormwater impacts that cannot be mitigated by conventional means (see Chapter 4)

Table 6-1. King County implementation of the Tri-County Model (continued).

Tri-County Model Program	King County Implementation
Regional Road Maintenance ESA program Guidelines	Continuing to implement the Road Maintenance ESA Program Guidelines and to seek ESA Section 4(d) *take* limits or exemptions for the program (see additional discussion in this chapter and in Chapter 2)
Watershed-Based Planning and Implementation	Contributing funding and leadership to multi-stakeholder WRIA and Shared Strategy conservation and recovery planning Implementing projects to acquire and restore habitat (see additional discussion in this chapter and in Chapter 2)
Adaptive Management and Monitoring	Contributing to the development of new scientific information and using it to guide programs and amend the Comprehensive Plan and development regulations Monitoring the effectiveness of regulations, programs, and capital projects over time and making adjustments as needed (see Chapter 5)
Habitat Restoration and Acquisition Program	Dedicating 1 percent of the County's capital budget discretionary funds to habitat restoration and protection, pursuing innovative solutions to reduce the need for new funding, and securing public and private funding partnerships (see Chapter 7)

Regional Road Maintenance ESA Program Guidelines

The Tri-County Road Maintenance ESA Technical Working Group developed a road maintenance program to contribute to the conservation of salmonids and other fish species and to secure a *take* limit or other assurances under Section 4(d) of the ESA. The Tri-County road maintenance program has become a statewide program with the Washington State Department of Transportation and several other counties implementing the program.

Agency biologists conducted a biological review of the Regional Program Guidelines in 2000 and 2001. The review concluded that implementation of the regional program is expected to improve habitat conditions at a greater rate than continued road maintenance practices without its implementation. Routine road maintenance activities in Washington that conform to the regional program are expected to preserve existing habitat function levels and allow natural progression towards properly functioning habitat conditions where habitat is impaired. The *Regional Road Maintenance ESA Program Guidelines* and the biological review are available at: *www.metrokc.gov/roadcon/bmp/pdfguide.htm*.

The NMFS 4(d) Rule describes limits on the prohibition of *take* to certain state and local programs in 13 specific categories. Routine road maintenance activities that have been found to contribute to properly functioning conditions are eligible for a limitation on the definition of *take* of threatened species. The guidelines were formally transmitted to NMFS and USFWS in December 2000. However, based on King County's understanding of the program's benefits the County began implementing the regional program in advance of formal approval by NMFS and USFWS.

Under the direction of the Regional Road Maintenance ESA Forum, and in partnership with the Washington State Department of Transportation, the University of Washington is offering extensive training to road maintenance staff on how to properly apply the guidelines.

It is expected that the Washington State Department of Transportation, King County, and 23 other jurisdictions will receive a final 4(d) *take* limit from NMFS by July 2002. The Regional Road Maintenance Forum is continuing to work with USFWS as it considers how to approve the program under ESA.

Puget Sound Shared Salmon Strategy

Under the ESA, NMFS and USFWS have responsibility to undertake recovery planning for chinook and bull trout, respectively. These agencies are participating in the Puget Sound Shared Salmon Strategy (Shared Strategy) to collaboratively develop recovery plans for chinook salmon and bull trout. King County Executive Ron Sims was one of the eight originators of the Shared Strategy, along with other representatives of local, state, federal, and Tribal governments. The Shared Strategy is designed to be a collaborative effort and to coordinate watershed and regional planning that can return salmon stocks throughout Puget Sound to sustainable and harvestable levels.[3]

In recovery planning, NMFS and USFWS must ensure that their actions are in accordance with their trust responsibilities for Tribal rights guaranteed in various treaties with the United States government.[4] The process for setting and achieving recovery goals will acknowledge treaty

[3] See the Shared Strategy web site at *www.sharedsalmonstrategy.org* for information and a schedule of deliverables.

[4] Detailed policy direction for carrying out the federal trust responsibility relative to ESA considerations is contained in Secretarial Order # 3206: American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the ESA, United States Departments of Interior and Commerce, June 5, 1997. See *www.tulalip.nsn.us/esatribe.html.*

rights by considering harvest needs as part of setting the goal. The co-managers (the Washington Department of Fish and Wildlife and appropriate Tribes) together are developing a recovery plan and goals. The watershed planning actions will be coordinated at the Puget Sound scale to determine if recovery and de-listing goals can be achieved.

To this end, King County is a member of the development committee of the Shared Strategy that provides policy leadership. From the Shared Strategy's inception, King County ecologists have participated on the chinook and bull trout technical teams. These teams are developing the science essential to setting salmon recovery goals. King County staff members are also helping to identify policy issues and to develop public outreach strategies for the Shared Strategy.

Watershed Planning

King County has had a long and productive history of using multi-disciplinary watershed planning, incorporating the disciplines of engineering, science, and land use planning to define effective management strategies to protect and restore aquatic ecosystems.

Basin Planning

Beginning in 1986, the Basin Reconnaissance Program evaluated the 72 basins in King County to identify priority problems associated with stormwater runoff, drainage, erosion, and aquatic resource degradation. King County prioritized planning in basins with high resource value and significant existing and near-term problems in the western third of King County. King County has implemented approximately $75 million worth of priority capital projects as recommended by the basin plans. The King County Council adopted all basin plans under the Comprehensive Plan.

Completed Basin Plans

Between 1987 and 1995, basin plans were completed for Soos, Covington, Jenkins, Bear, Evans, Hylebos, Issaquah, and Tibbetts creeks, lower Puget Sound, east Lake Sammamish, and the Cedar River basin. During this time two early action reconnaissance-level plans were developed for Swamp Creek and the middle Green River basins. Since 1996 the May Creek basin plan and the Des Moines Creek basin plan have also been completed. The County, along with several other jurisdictions, has continued planning for stormwater management and ESA compliance in the Miller Creek basin. The County is also conducting additional

reconnaissance-level planning assessments within the rural drainage program service areas to evaluate stormwater, water quality, and natural resource protection problems and capital solutions. The plans were developed, where appropriate, in cooperation with other jurisdictions that shared local government responsibility.

Application of Basin Plans

Completed basin plans provide detailed technical evaluations of current and future conditions and make recommendations for capital projects, regulatory standards, and programmatic priorities to solve existing storm and surface water runoff and aquatic habitat problems and to protect these surface waters from future degradation. In addition, these technical evaluations served as the basis for the 1990 and 1998 updates to the Surface Water Design Manual, the Water Quality Ordinance, and the current proposed updates to the stormwater regulations. The basin planning program provided the technical basis for changes to erosion control and clearing and grading practices.

The basin plans' programmatic recommendations directed the development of the King County basin and watershed stewardship program, many aspects of the forest management program, and best management practices for effective management of urban and rural landscapes. Implementation of the basin plans has also been modified to ensure that capital, programmatic, and regulatory standards and practices take into account the needs of listed chinook and bull trout populations as recommended in Return of the Kings. Additional details regarding basin plan implementation can be found in the *Basin Plan Closeout Report* (King County 2001).

Since the development of interjurisdictional watershed forums in 1996, the basin plans have provided the technical and procedural basis for the development of priorities for broader watershed management. King County and participating cities formed five watershed forums to cooperatively manage fish habitat, floods, and water quality. The forums consisted of appointed, advisory bodies of elected officials from all local governments within each of five watershed areas: Snoqualmie, Sammamish, Cedar/Lake Washington, Central Puget Sound, and Green/Duwamish.

The Waterways 2000 program built upon the priorities for managing aquatic resources in King County by identifying basins with regionally important natural resources. The Waterways 2000 program provided financial and community support for the acquisition and long-term protection of critical natural resources through purchase, current use

taxation programs, and other incentives. King County has incorporated the preservation methods pioneered in the Waterways program into the management of its watersheds.

Watershed Resource Inventory Area Planning

Following the federal ESA listing of chinook and bull trout and the passage of Washington RCW 77.85, which recommended planning for the conservation of listed fish species on the basis of Watershed Resource Inventory Areas (WRIA), King County worked with the cities of Seattle and Bellevue and the Suburban Cities Association to collaborate to develop watershed salmon conservation plans.

King County contains portions of four WRIAs: 7 (Snohomish watershed), 8 (Lake Washington/Cedar/Sammamish watershed), 9 (Green/Duwamish and Central Puget Sound watershed), and 10 (Puyallup/White watershed) (see Figure 2 in Chapter 1). King County is the lead for planning in WRIAs 8 and 9, Pierce County is lead in WRIA 10, and Snohomish County is the lead in WRIA 7. As a result, the five original watershed forums restructured in 2000 according to WRIA boundaries. King County recognizes that the benefits of watershed-based planning and inter-governmental coordination are numerous. The WRIA organization provides a venue for cooperation and coordination among the various jurisdictions and stakeholders. Because ecological and physical functions occur at a watershed scale, it is more efficient to assess problems by WRIA than by individual jurisdiction.

King County's strong support for WRIA plans will help ensure that the local habitat component for a Puget Sound recovery plan (working with the Shared Strategy) is coordinated with King County's growth management priorities. When making project funding decisions, King County also considers ecological approaches sought by the state Salmon Recovery Funding Board.

In 2001, King County entered into interlocal agreements and memorandums of understanding with local jurisdictions from King County and portions of Snohomish County for the joint funding, development, and review of WRIA plans. Each jurisdiction pays a share of the costs under a formula based on population, land area, and assessed valuation.

Watershed Resource Inventory Areas 7, 8, and 9

The Tri-County Salmon Conservation Coalition developed common watershed planning elements in the Tri-County Model. Planning in WRIAs 7, 8, and 9 is drawing from these elements, including:

- reconnaissance assessment
- near-term action agenda
- strategic assessment
- comprehensive conservation plan.

WRIA 10 has chosen not to follow the Tri-County Model and has opted for a different approach using existing information and use of the Ecosystem Diagnosis and Treatment model in its planning effort (see discussion below).

Technical Studies

Reconnaissance assessments bring together existing information on salmon and salmon habitat from both scientific literature and local expertise for each watershed. The assessments identified important problems and factors that contribute to salmon decline and identify gaps in data and technical understanding.

In WRIA 7, the reconnaissance effort culminated in the publication of the *Initial Technical Work Plan* (1999) and the *Chinook Habitat Evaluation Matrix* (2000). The *Habitat Limiting Factors Report* for WRIA 8 was completed in September 2001, and the *Habitat Limiting Factors and Reconnaissance Assessment Report* for WRIA 9 was completed in December 2000. The *Reconnaissance Assessment of the State of the Nearshore Ecosystem: Eastern Shore of the Central Puget Sound, Including Vashon and Maury Islands (WRIAs 8 and 9)* was completed in May 2001 and incorporated into the WRIA 8 and 9 limiting factors analyses.

Near-Term Action Agendas

The near-term action agendas outline early, voluntary steps that can ameliorate some factors negatively affecting salmon and their habitat. Each near-term action agenda guides actions that local governments and other implementing entities can take over the next few years as resources and opportunities come available. The agendas are an interim step and are expected to serve as a building block for long-term conservation plans (see below).

In WRIA 7, the final version of the Snohomish Basin Near-Term Action Agenda was approved in December 2001 and includes guidance for local governments in updating local policies and regulations while a more detailed salmon conservation plan is developed.

King County is implementing actions in the WRIA 7 Near-Term Action Agenda through its basin stewardship program. The Snoqualmie basin

steward is using the Action Agenda focus area approach as a starting point to develop habitat protection and restoration measures in the highest-priority chinook habitat conservation areas. This will lead to grant-funded proposals for property acquisition, levee setbacks, and other measures along the Tolt, Raging, and Snoqualmie rivers.

In WRIA 8, the Near-Term Action Agenda was approved in May 2002. It offers a near-term strategy and a menu of opportunities for early actions that include 200 habitat restoration and research projects, 60 education and outreach recommendations, and guidance on more than 20 policy and regulatory items.

The *Near-Term Action Agenda* for WRIA 9 was adopted in the first quarter of 2002 based on the *Habitat Limiting Factors and Renaissance Assessment Report* findings. It contains actions that can be taken in the next two to three years while more detailed conservation planning work is underway.

King County is proceeding with projects and regulatory recommendations identified in each near term action agenda as funding and resources are available. In many cases, projects identified as part of the agendas are already underway or are being evaluated for funding within 2003 budgets. King County basin stewards are using the agendas as guidance for protecting and restoring habitat.

Strategic Assessments

The third phase of the conservation planning process, strategic assessments, will synthesize reconnaissance assessment results. It will require research to fill important information gaps and will result in a more thorough understanding of the problems and opportunities in the watersheds. Strategic assessments will provide the scientific foundation for comprehensive salmon conservation plans in each watershed, as well as the baseline information needed for adaptive management.

In 2002, the Snohomish Basin Multi-Species Salmonid Habitat Conditions Review will be completed and the Strategic Assessment will be scoped in the first half of 2002 and be completed in 2003. In WRIA 8, work is underway on the Strategic Assessment and should be completed in 2003. In 2002, the WRIA 9 Strategic Assessment will also be underway. As was true in the development of technical studies for the Reconnaissance Assessments, King County is funding, managing and staffing the majority of technical studies in the King County portions of all three WRIAs, and is cooperating with other jurisdictions, agencies and Tribes in additional technical studies.

Comprehensive Salmon Conservation Plans

Comprehensive salmon conservation plans are intended to guide long-term habitat conservation and recovery actions in the watersheds and will be the ultimate products of the watershed-based planning. It is envisioned that NMFS and USFWS will use the watershed resource inventory area plans as a building block in developing a Puget Sound-wide chinook recovery plan. Scoping for conservation plans began in 2002 with plan completion expected in 2004-2005.

King County is striving to balance ESA recovery obligations with the County's legal and policy obligations under the state Growth Management Act, the federal Clean Water Act, and other mandates. The County is fully committed to ensuring the long-term restoration and protection of salmon habitat and the full ecosystem functions of natural systems in King County in balance with population growth, economic development, and a sustained high quality of life. This commitment will become increasingly important as implementation and monitoring of actions and regulations identify new challenges over the next 50 years.

Ecosystem Restoration Projects

The U.S. Army Corps of Engineers (Corps), through the Water Resources Development Act, has been supporting ecosystem restoration efforts in portions of WRIAs 8 and 9. This process involves a reconnaissance study (100 percent federal funding), a feasibility study (50 percent federal funding and 50 percent local), pre-construction engineering and design (75 percent federal funding and 25 percent local), and a construction phase (65 percent federal funding and 35 percent local). The Corps requires a local umbrella sponsor in the process. King County is the local non-federal sponsor for WRIA 9 and for the east study in WRIA 8, and provides overall program management, technical assistance, and quality control. In WRIA 9, the local match is being met in part through the use of King Conservation District funds administered through the Watershed Resource Inventory Area 9 Forum.

The ecosystem restoration plan for WRIA 9 is in the preconstruction engineering and design phase. Phase 1 construction is expected to be more than $40 million over a 5-year period pending federal construction appropriations. The entire Green/Duwamish ecosystem restoration project is $113 million over 10 years for 45 recommended projects. WRIA 8 is in the feasibility study phase.

A nearshore reconnaissance study was completed in 2000 and a phase 1 feasibility study started in 2001. The Washington State Department of Fish and Wildlife is the local non-federal sponsor for the nearshore study.

However, King County provides both technical and policy staff support to the study.

Watershed Resource Inventory Area 10

King County participated in the development of the *Salmon Habitat Limiting Factors Report for the Puyallup River Basin* for WRIA 10 that was led by the State Conservation Commission. WRIA 10 also released the first phase of Ecosystem Diagnosis Treatment modeling results called *Watershed Analysis for the Development of Salmonid Conservation and Recovery Plans within Pierce County*. This report includes portions of the White and Hylebos basins over which King County has jurisdiction. King County has actively participated in the Puyallup River Watershed Council and the Hylebos Watershed Action Committee. The Puyallup River Watershed Council includes a Citizen's Committee. In 2002, a strategy document will be completed to provide a framework for evaluating Salmon Recovery Funding Board and other habitat recovery project proposals.

As a member of the Hylebos Watershed Action Committee, King County has collaborated with the staff from the Corps to develop a scope of work for a Hylebos basin watershed plan. The objective of the scope is to develop a restoration plan that supports Hylebos Watershed Action Committee activities and provides a linkage with watershed health and salmon to foster community stewardship. Once complete, the scope will be utilized to solicit support for an interlocal agreement amongst watershed entities to complete a Hylebos salmon recovery plan.

Ecosystem Study

The Corps has been authorized to initiate work in 2002 on a General Investigation New Start in WRIA 10. This is a technical investigation that will lead to the implementation of federal and local cost-shared habitat construction projects (similar to the Ecosystem Restoration Studies conducted for WRIAs 8 and 9). In the first year, a reconnaissance study will be completed to determine federal interests. This study is fully funded by the Corps and will be completed with the assistance of a work group of watershed stakeholders, including King County. King County will participate in the next portion of the investigation, a feasibility study for project proposals. Final design and construction will occur when the feasibility study is complete.

Chapter 7 Funding Habitat Programs

Funding is a critical element of the County's commitment to do no further harm to fish habitat and provide for long-term salmon recovery. Beyond the County's regulatory programs, there are habitat areas that require permanent protection through acquisition and others that should be restored. The King County habitat funding program has two primary goals:

- Protect existing high-quality habitat and restore degraded habitat areas to provide a substantial benefit for salmon recovery.
- Allocate funding to the highest priority habitat needs within the County.

Habitat Funding Amount

King County Commitment

King County will use a variety of local, state, and federal sources to fund habitat protection and restoration projects. Together, these sources are likely to provide at least $20 million per year for essential habitat work within King County. Subject to federal, state, and local laws, King County intends to meet its habitat needs by funding habitat improvements through:

- Direct County appropriations
- Road, stormwater, wastewater, and other public works projects (that also improve habitat)
- Cost sharing with other local jurisdictions in King County.

Direct Appropriations

As the cornerstone of the habitat funding program, King County has committed to work with the County Council to dedicate an amount equal to at least one percent of King County's total annual capital budget to salmon habitat protection and restoration. Based on the County's 2001 capital

In the past 2 years, King County Department of Natural Resources and Parks dedicated more than $7.3 million to fish habitat improvements, including:

- *$2.4 million for 19 major capital projects completed by the Water and Land Resources Division*
- *$4.9 million for Madsen Creek tributary habitat and water quality enhancements.*

budget ($531 million), this commitment would amount to approximately $5.3 million (for King County budget information, see: *http://www.metrokc.gov/budget*).

King County will meet the one percent capital budget commitment through a variety of funding sources. These sources include the Surface Water Management and Rural Drainage, King Conservation District, Road Services, Conservation Futures Tax, Solid Waste, Wastewater, River Improvement, and Real Estate Excise Tax funds.

Funding Through Public Works Projects

When completing projects to provide basic public services, King County will capitalize on opportunities to improve habitat. In addition to the one percent commitment above, King County will provide funding for habitat work in excess of mitigation requirements associated with road construction and other public works projects that improve habitat while serving another primary purpose, such as a culvert replacement. The total King County contribution to habitat improvements could amount to at least $10 million per year for the near future.

In the past 2 years, King County dedicated more than $6.6 million to fish habitat improvements associated with transportation projects, including:

- *5 major fish passage improvement projects,*
- *stream channel and riparian enhancements,*
- *removal of impervious surfaces,*
- *habitat acquisition, and*
- *water quality control projects.*

King County is considering conservation benefits when prioritizing transportation projects.

Sharing Costs with Other Local Jurisdictions

Wherever possible, King County will share the costs of habitat projects with other local jurisdictions within the county, taking advantage of the working partnerships developed through the watershed forums and WRIA planning processes. A recent example of a cost-sharing project is the fish passage improvements at the Hiram M. Chittenden Locks (Ballard locks), co-funded with the City of Seattle. The amount of funding available through these partnerships will vary greatly depending on the individual project.

Federal and State Funding

King County will work with regional conservation leaders and other jurisdictions to support and secure additional state and federal funds for County habitat programs and projects and the Tri-County region. The

Tri-County Salmon Conservation Coalition was instrumental in securing over $70 million for Washington state, and an additional $120 million for local salmon conservation. The County also will look for opportunities to fund habitat improvements as a part of major state transportation and other capital projects.

King County recognizes the critical role that state and federal funding has played in the early action phase of salmon recovery as well as the importance of increased levels of support needed in 2005-2010 when watershed conservation plans will be complete. To this end, King County must continue its efforts to secure federal funding to meet the increased need anticipated in 2005 for implementation of the conservation plans.

Federal Funding

King County will:

- Maintain strong local and regional coalitions in support of federal funding.
- Work to broaden the base of support in the federal administration and Congress in 2003-2004 for early actions.
- Support increased levels of funding 2005-2010 for watershed conservation plan implementation.
- Refine information on needs and priorities through watershed conservation planning, stormwater and river management plans, land use planning, and scientific monitoring and studies.
- Ensure efficient implementation of funded projects.
- Demonstrate results of funded projects.
- King County will use existing federal grant and aid programs to diversify the base of federal support for salmon recovery. In particular, King County will continue to pursue funding through the U.S. Army Corps of Engineers ecosystem restoration programs and the U.S. Environmental Protection Agency's many grant programs associated with the Clean Water Act and the National Estuary Program. King County also will support federal appropriations to meet the funding needs of the National Marine Fisheries Service and U.S. Fish and Wildlife Service.

The County will seek opportunities to secure federal disaster funds for projects that can benefit riparian habitat and salmon recovery (e.g., buy-outs of flood prone structures).

State Funding

King County will continue its long-term state funding strategy by using existing authorities to fund ESA-related projects and programs. The county will continue to compete for ESA funding through state grant programs such as the Salmon Recovery Funding Board (which administers state and federal funds), the Centennial Clean Water Fund, Aquatic Lands Enhancement Account, passage barrier funding through the Washington State Department of Transportation, and the Interagency Committee on Outdoor Recreation land acquisition programs. The County will continue to dedicate staff time to prepare applications and to support consideration of the proposals by these funding sources.

King County will continue to work with the Governor, key legislators, and salmon interests elsewhere in the state to prepare legislation to establish and appropriate funding to the salmon recovery. The County will exercise its discretion to apply the services of legislative and departmental staff and contract lobbyists to support salmon recovery legislation.

Allocating Habitat Funds

King County will allocate the majority of habitat funding to the highest priority projects for salmon recovery as directed by watershed near-term action agendas in the short term and conservation plans in the long term. Also, the County will provide funding as part of enhancements associated with public works projects.

In 2000 and 2001, King County and its partners spent $17.3 million to acquire 2,300 acres in riparian areas, forested watershed areas, and floodplains in 2000-2001 (see Chapter 2 of this report for projects completed). This contribution adds to the $270 million in regional funds spent to preserve 29,000 acres through 1999.

The County will use scientific and land use monitoring to evaluate the results of funding and identify feasible mid-course corrections to improve the effectiveness of habitat funding. King County will support the development and use of monitoring methods and protocols to evaluate the effectiveness of funded habitat projects. The County will alter project locations, design standards, and construction techniques as needed to improve the effectiveness of funded projects.

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APPENDIX A

Contacts and Resources

Appendix A – Contacts and Resources

The information contained in this report was researched and compiled by King County staff based on the best available information as of June 2002. This report documents the progress King County has made in its fish and wildlife conservation efforts and establishes a benchmark for future work. The programs and accomplishments listed herein are not exhaustive; please refer to Return of the Kings and the 1998-2000 ESA Progress Report for further information. For general information on how King County serves the citizens of the region, please visit the King County web site at *www.metrokc.gov*.

For more information on the programs in this report, please contact:

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King County Salmon Conservation and Recovery
www.metrokc.gov/exec/esa

King County Department of Development and Environmental Services
http://www.metrokc.gov/ddes/

King County Department of Natural Resources and Parks
http://dnr.metrokc.gov
http://dnr.metrokc.gov/wlr/index.htm

King County Department of Transportation
http://www.metrokc.gov/kcdot

Salmon Information Center – Regional News and Information
1-877-SALMON-9
www.salmoninfo.org

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